DRUG & COSMETIC INDUSTRY

March 1953

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ANSWERS TO YOUR QUESTIONS ABOUT ROCHE VITAMIN A

Q. *What is Roche vitamin A?*

A. It is vitamin A, the product of a synthesis which starts with Citral, from lemon grass oil. It is identical biologically with the vitamin A from other sources, such as fish livers. A Roche research team directed by Dr. Otto Isler announced their famous synthesis in 1947. This successful, economical process is now used to produce vitamin A of superb quality by the tons at Roche Park.

Q. *Does Roche vitamin A have a "fishy" odor or taste?*

A. None whatever, nor is there any "fishy burp." In fact, Roche vitamin A has almost no odor or taste and so is preferred for pharmaceutical preparations.

Q. *Will I be able to get a steady supply of Roche vitamin A?*

A. You will. The entire commercial needs of the food and pharmaceutical industries of the United States and Canada could be met from our Nutley plant.

Q. *Can I be sure of a "standard" product?*

A. You can. Roche vitamin A is manufactured under strict laboratory control. It is more stable. It is uniform. The regular commercial types of Roche material, if diluted to 50,000 to 65,000 units per gram, will meet the specifications of U.S.P. XIV for oleovitamin A. It is a product of excellent quality.

Q. *What about price?*

A. Roche vitamin A is not subject to wide fluctuation of price, as has been true with vitamin A from natural sources. This can mean large savings for you as there is no need to carry large inventories as was the case prior to the introduction of Roche vitamin A in 1950. Never before has the purchaser been assured of such low prices, consistent with quality and uniformity.

Q. *How is Roche vitamin A packed?*

A. All Roche vitamin A is packed under conditions which assure its stability in customary shipment and storage.

Q. *Can I get help from Roche in using vitamin A in my products?*

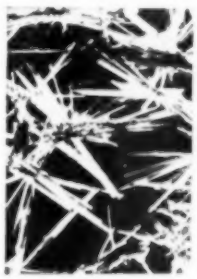
A. Certainly. The technical experts at Roche are ready at all times to help you. If you need samples, please send your requests to the Vitamin Division. For years many industries—canning, baking, milling, pharmaceutical manufacturing—have looked to Roche as their headquarters for information about, and supplies of, vitamins. It is important to you that Roche specializes in the manufacture of vitamins.

Q. *Is Roche vitamin A available in different types and potencies?*

A. It is. The following table shows the types most popular in pharmaceutical manufacturing.

TYPE	DESCRIPTION	POTENCY	ADDITIVE*
P1MO	Vitamin A palmitate	1,000,000 U.S.P. XIV units per gram	Edible oil only for standardization
P1.3	Vitamin A palmitate	Ranging between 1,250,000 and 1,500,000 U.S.P. XIV units per gram	None
A1MO	Vitamin A acetate	1,000,000 U.S.P. XIV units per gram	Edible oil only for standardization

*Antioxidants or other additives are included on customer's specifications.



Notes: Type P1MO has less tendency to crystallize during storage and handling than higher concentrations of vitamin A palmitate and acetate.

Type P1.3 is more susceptible to crystallization than type P1MO but can be handled without difficulty when using certain precautions.

Two other types of vitamin A palmitate and acetate are also available. They may be used for research and special production in which special handling can be provided. They are: Type P1.8 vitamin A palmitate—1,650,000 to 1,800,000 U.S.P. XIV units per gram and Type A2.9 vitamin A acetate—2,900,000 U.S.P. XIV units per gram.

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DRUG & COSMETIC INDUSTRY

MARCH, 1953

FEATURE ARTICLES • •

THE DELANEY COSMETIC BILL	S. L. Mayham	318
PHARMACEUTICAL ASPECTS OF VITAMIN B_{12}	Walter G. Gakenheimer	320
ADMINISTRATIVE PROGRESS IN 1952	Charles W. Crawford	322
CONTOUR LOTIONS	Harry Hilfer	324
WATERLESS HAND CLEANERS	Milton A. Lesser	326
CHLOROPHYLL IN INTERNAL MEDICINE	F. Howard Westcott, M.D.	328
THE GROWTH IN COSMETICS		330
AIR CONDITIONING AT LILLY	G. A. Kelley	332

DEPARTMENTS • •

KEEPING POSTED	Thomas R. Farrell	313
PACKAGING AND SELLING	Frazer V. Sinclair	335
DOIN'S		343
NEWS	Frank Child III	351
TRADE LITERATURE		361
MANAGEMENT FORUM	Francis Chilson	363
ADVANCING THERAPY	Milton A. Lesser	373
COMPOUNDER'S CORNER	Milton A. Lesser	376
PATENT THOUGHTS AND TRENDS	Thomas Cifelli, Jr.	379
READERS' QUESTIONS	Milton A. Lesser	383
PERFUMER'S SHELF	Milton A. Lesser	384
ANIMAL HEALTH	Milton A. Lesser	386
ABREAST OF THE MARKETS	Frank Child III	389
INDUSTRY'S BOOKS	Harry G. Kelbly	395

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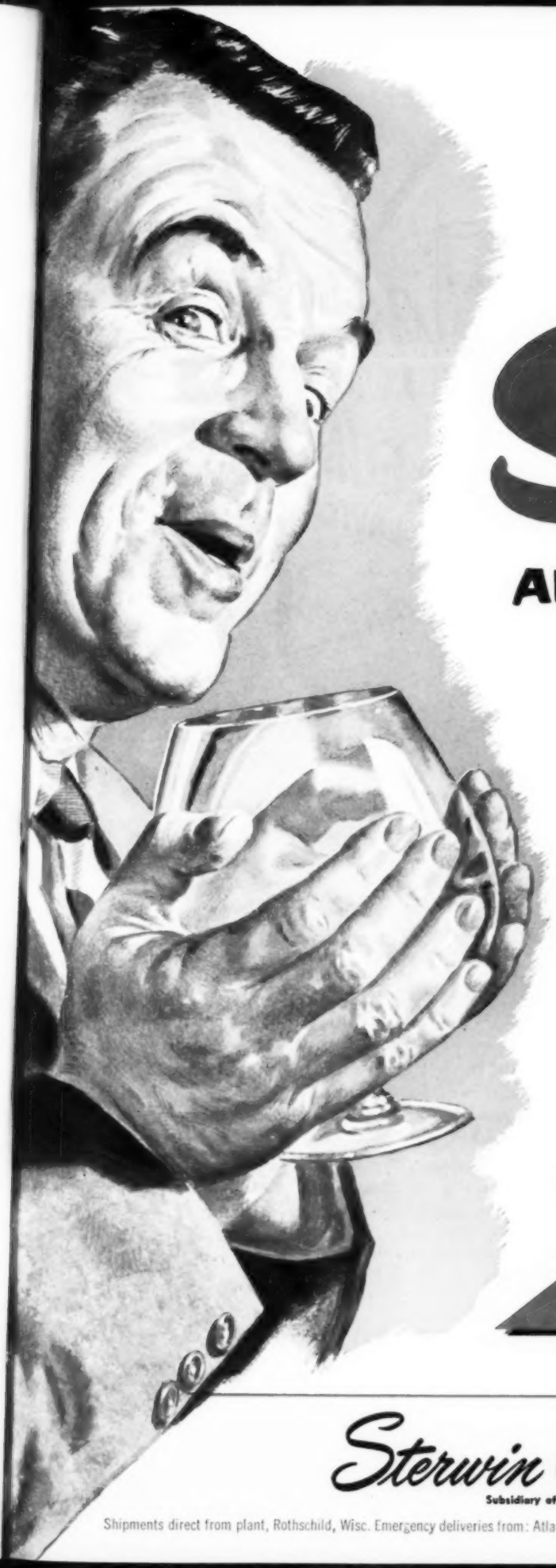

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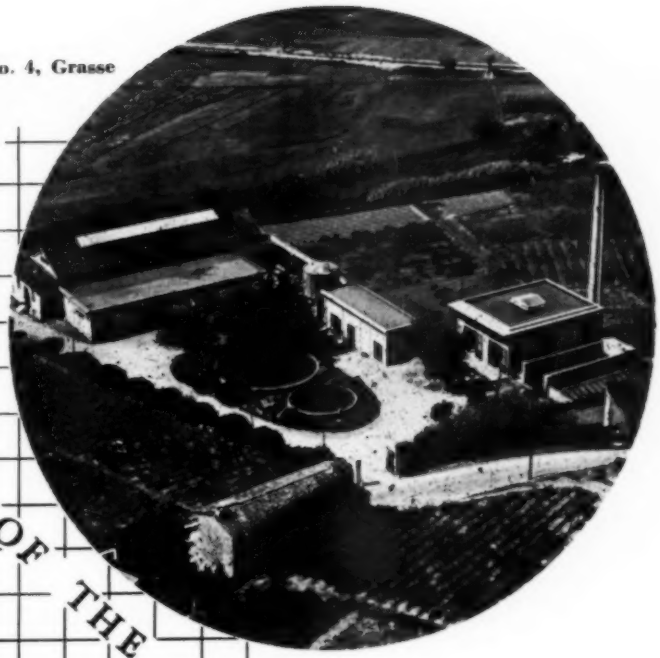

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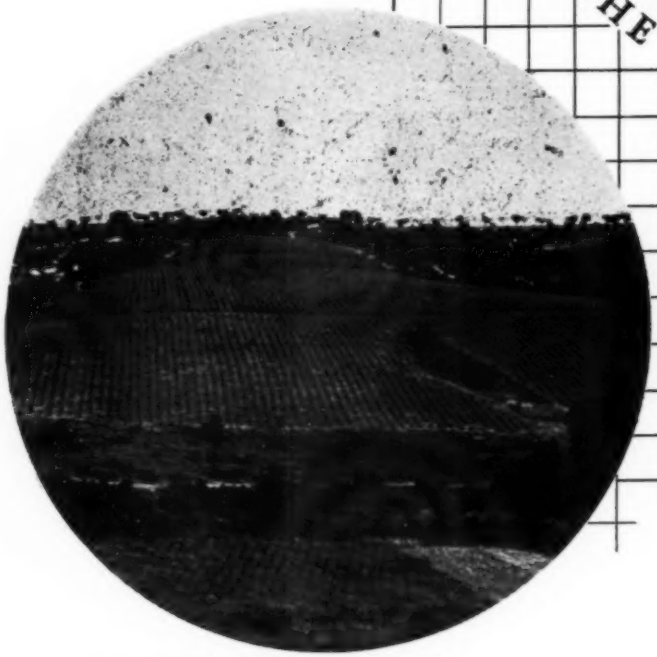

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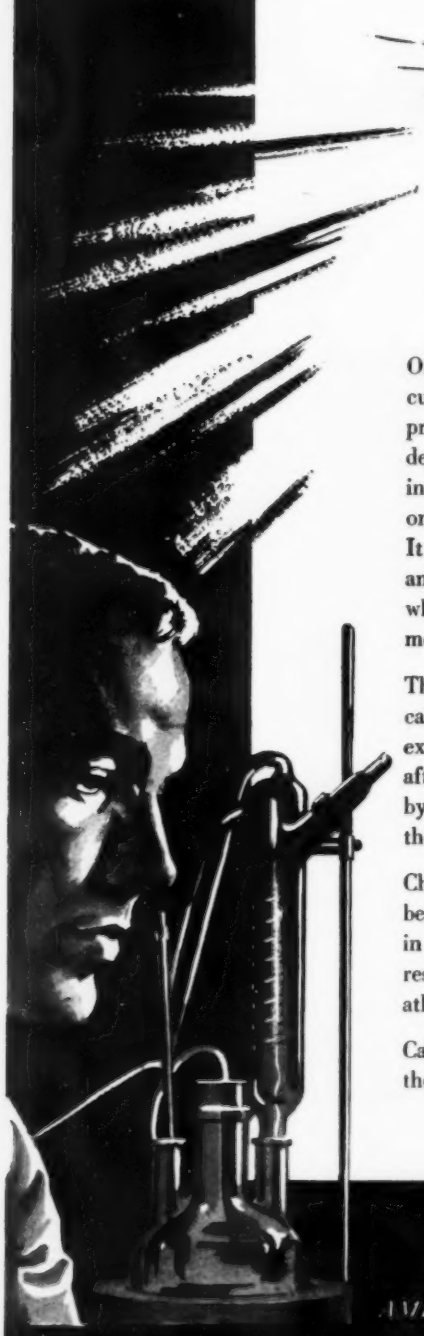

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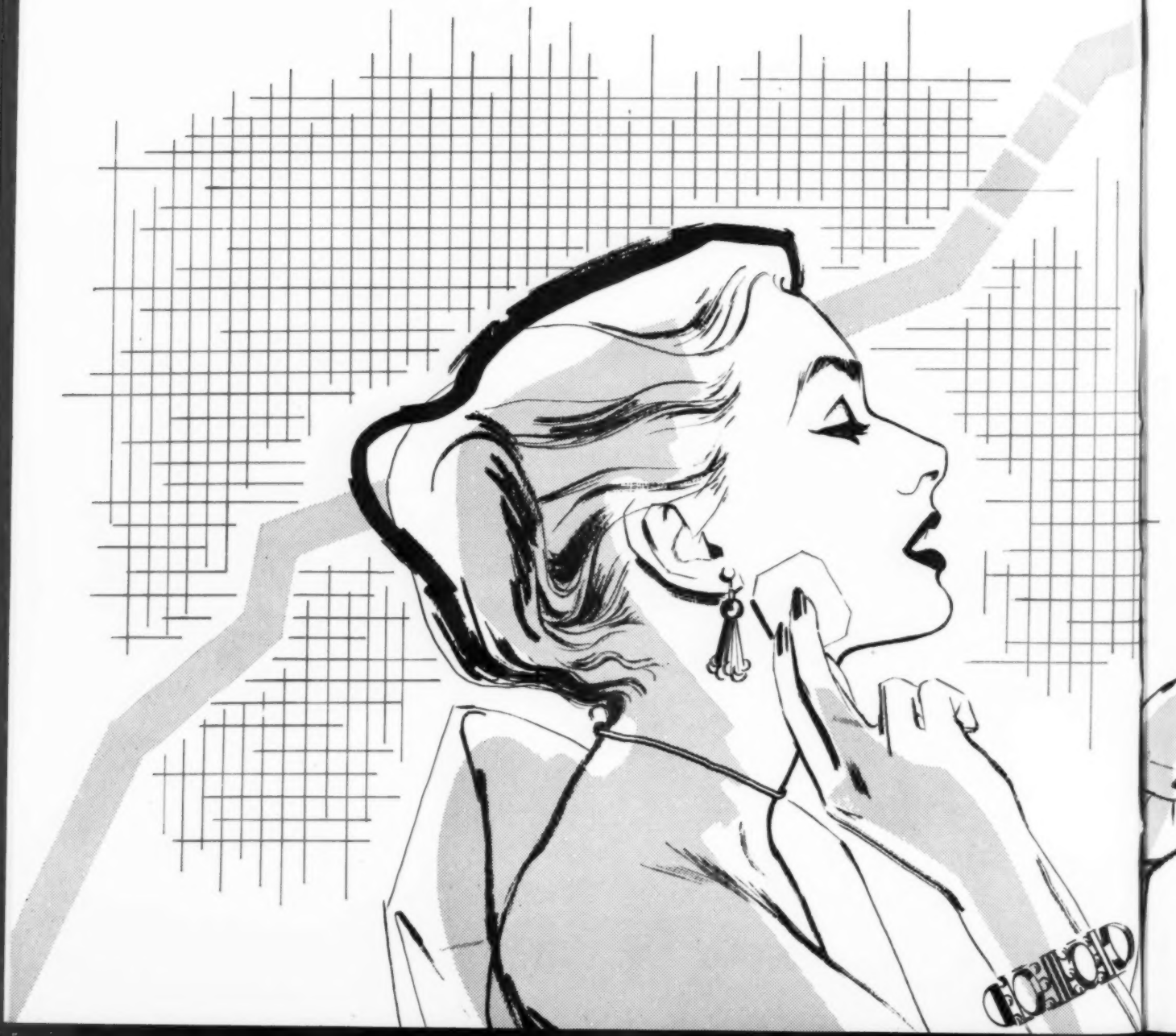

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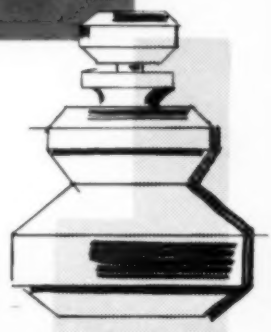

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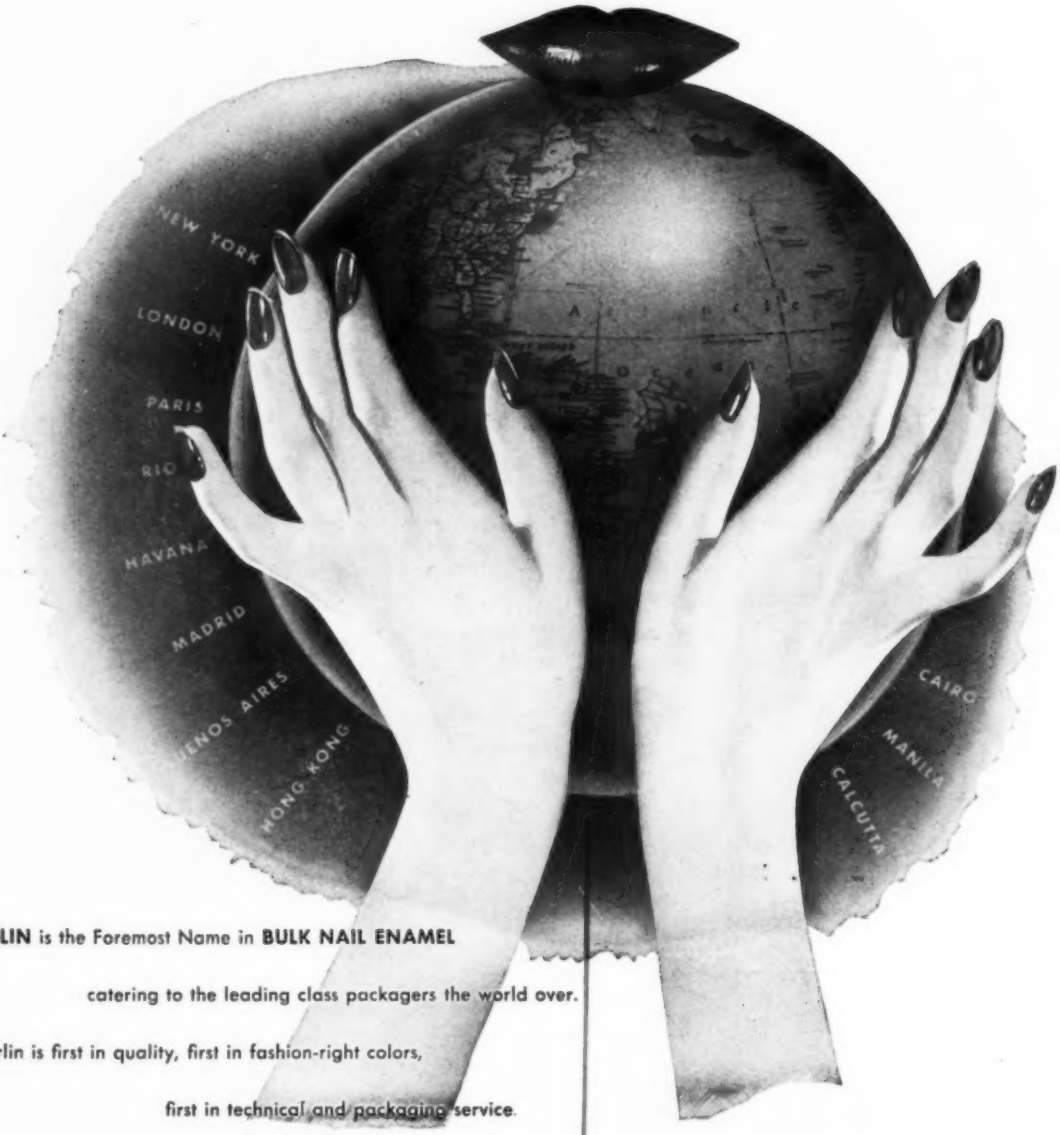

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Boiling Point:	decomposes above 40°C
Cl_2 Content	66%
Sp. Gr., 15.5°/15.5°C	1.638
Flash and Fire Point	none

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Appearance: Yellow to reddish heavy liquid with pungent odor

TYPICAL PROPERTIES

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Sp. Gr., 15.5°/15.5°C	1.6885
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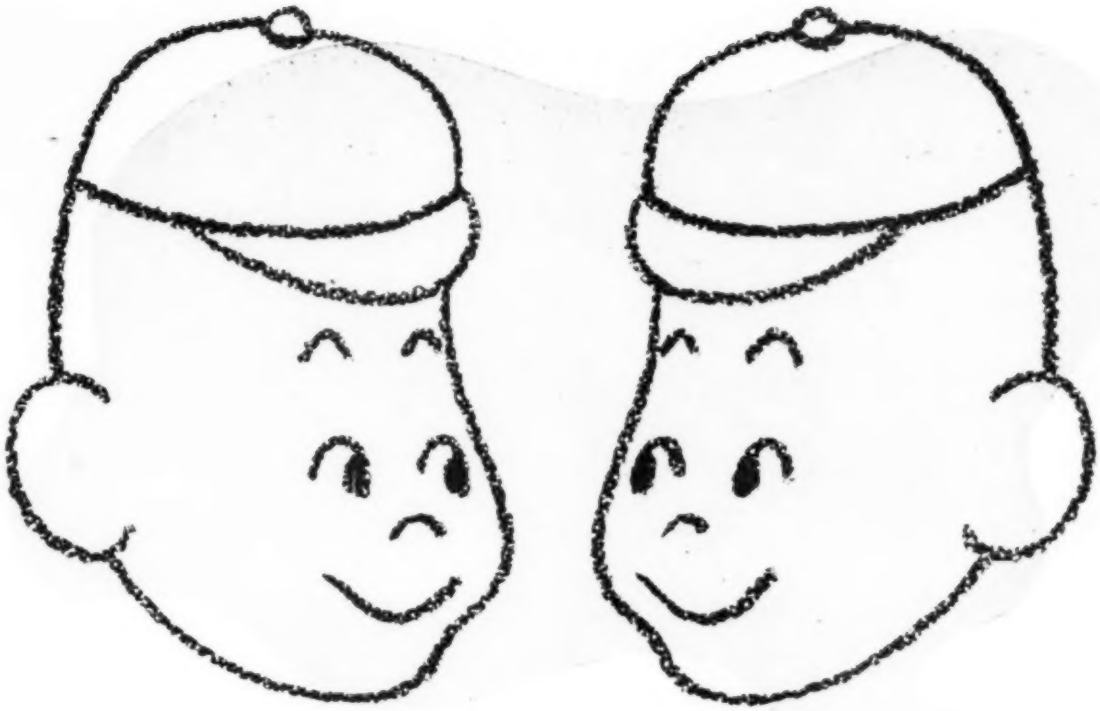

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Specifications of Monsanto Acetylsalicylic Acid, U.S.P.

White crystals or powder; assay 99.5% min.; solubility in ethyl alcohol 95% (1:5) complete; solubility in 10% Na_2CO_3 (1:20) complete; ash 0.05% max.; conforms to U.S.P. test for heavy metals, carbonizable impurities, residue on ignition, chloride, sulfate and free salicylic acid.

MONSANTO PHARMACEUTICALS

Acetanilid, U.S.P.
Acetophenetidin, U.S.P.
Acetylsalicylic Acid, U.S.P. (Aspirin)
N-Acetyl-para-aminophenol
Actamer* 2,2'-thiobis (4,6 dichlorophenol)
Benzoic Acid, U.S.P.
Benzyl Benzoate, U.S.P.
Caffeine, U.S.P.
Calcium Phosphate, Di
Chloral Hydrate, U.S.P.
Chloramine-T
Ferric Phosphates
Glycerophosphates
Magnesium Phosphates
Methyl Salicylate, U.S.P.
Phenol, U.S.P.
Phenolphthalein, U.S.P.
Phenylacetic Acid and derivatives
Phosphoric Acid
Potassium Ammonium Phosphate
Saccharin, U.S.P.
Salicylamide
Salicylic Acid, U.S.P.
Salol (Phenyl Salicylate)
Santophen 1
Sodium Benzoate, U.S.P.
Sodium Phosphate, Di
Sodium Salicylate, U.S.P.
Sulfanilamide, U.S.P.
Thenylpyramine HCl and derivatives

Santophen: Reg. U. S. Pat. Off.
**Trade-mark*

ASPIRIN

MESH: (All tests made on U. S. standard screens)

	20-MESH	40-MESH	80-MESH
Retained on—			
20-mesh screen	Trace max.		
30-mesh screen	5.0% min. 10.0% max.		
40-mesh screen		Trace max.	
45-mesh screen	45.0% min. 60.0% max.		
50-mesh screen		10.0% min. 20.0% max.	
60-mesh screen	70.0% min. 85.0% max.		Trace max.
80-mesh screen		45.0% min. 60.0% max.	2.0% max.
Through—			
100-mesh screen	10.0% max.		
140-mesh screen		25.0% max.	

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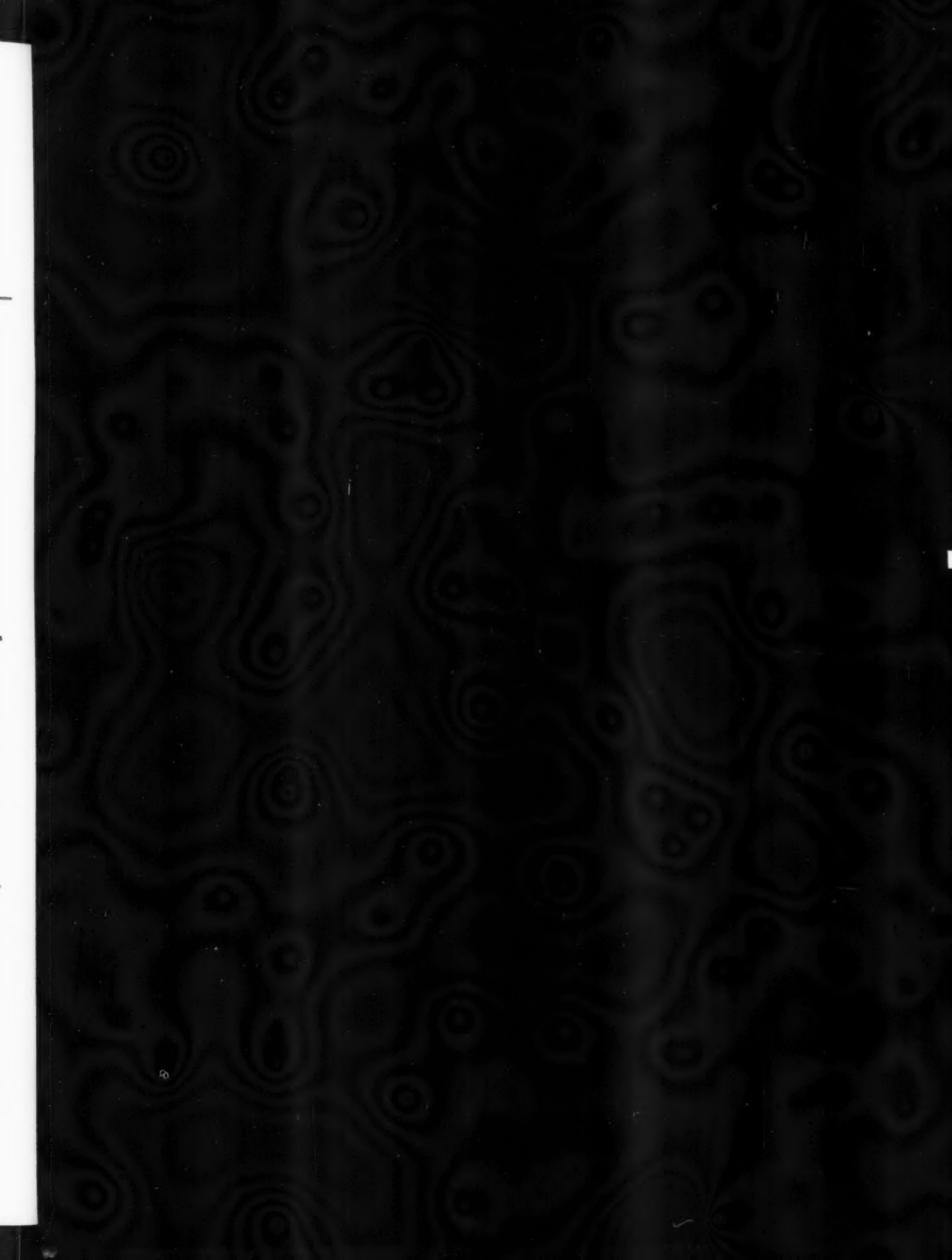

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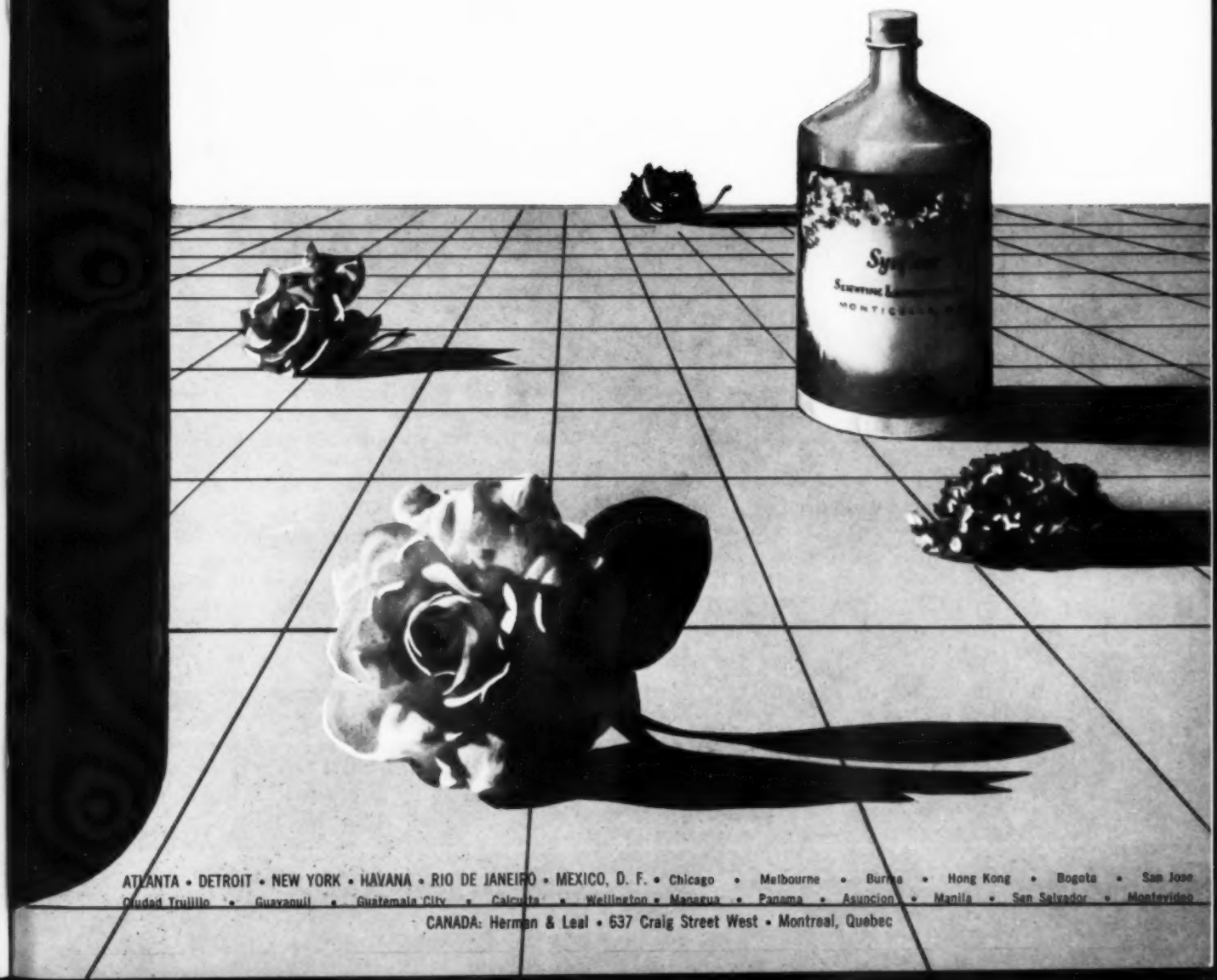

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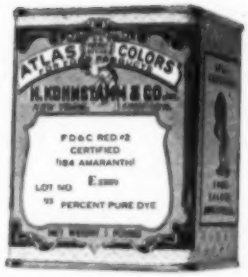

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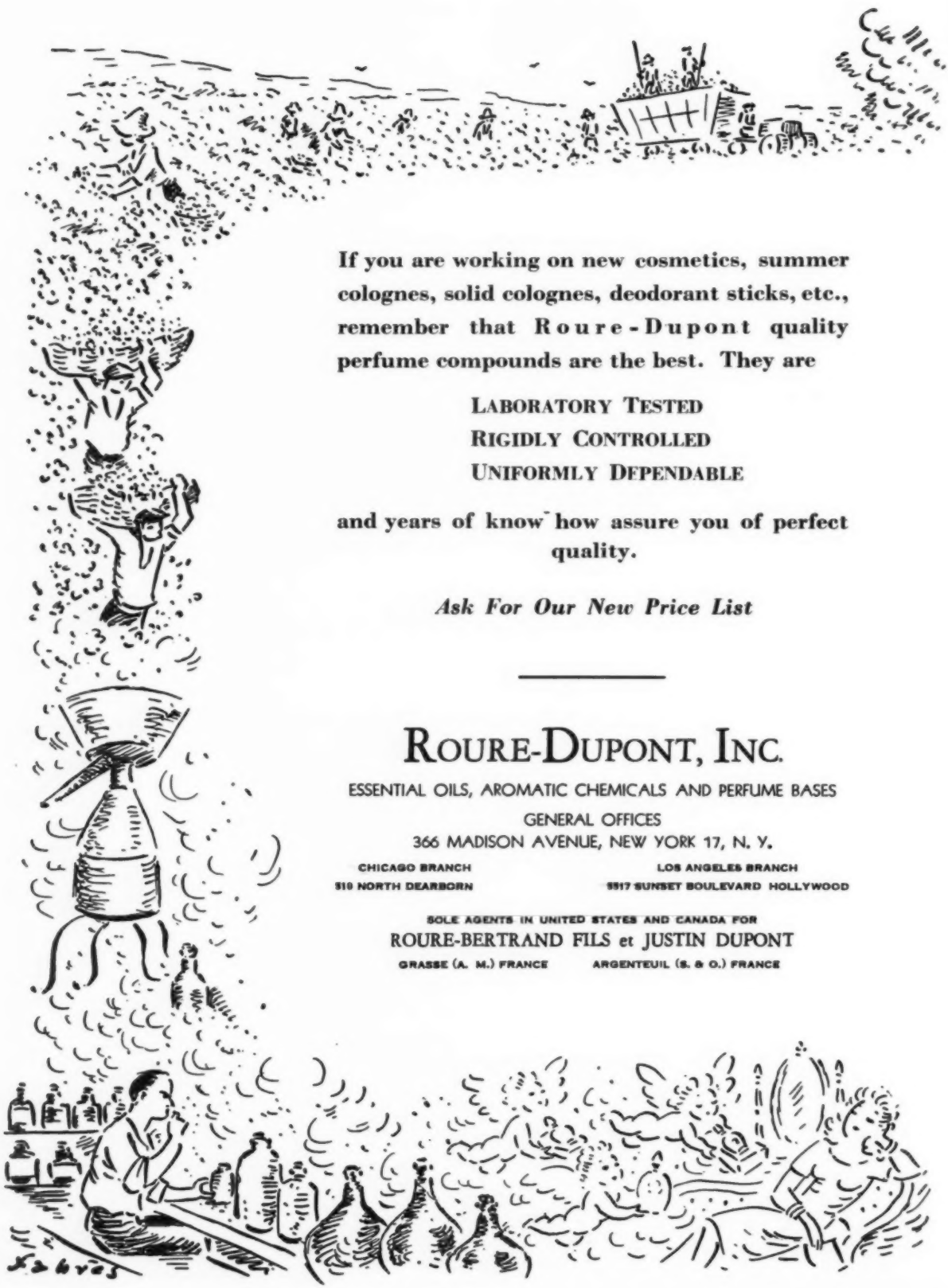

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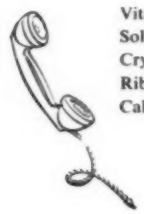

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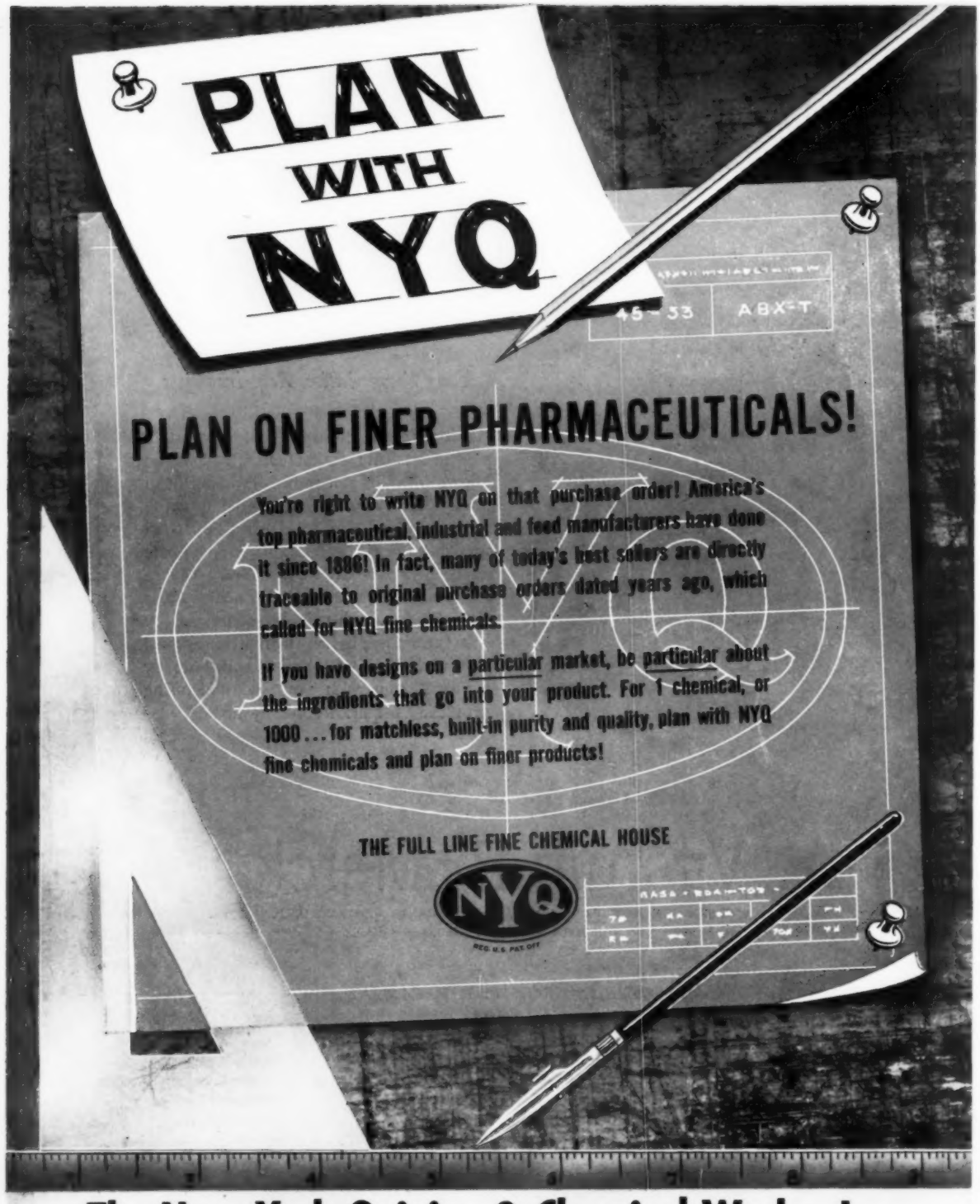
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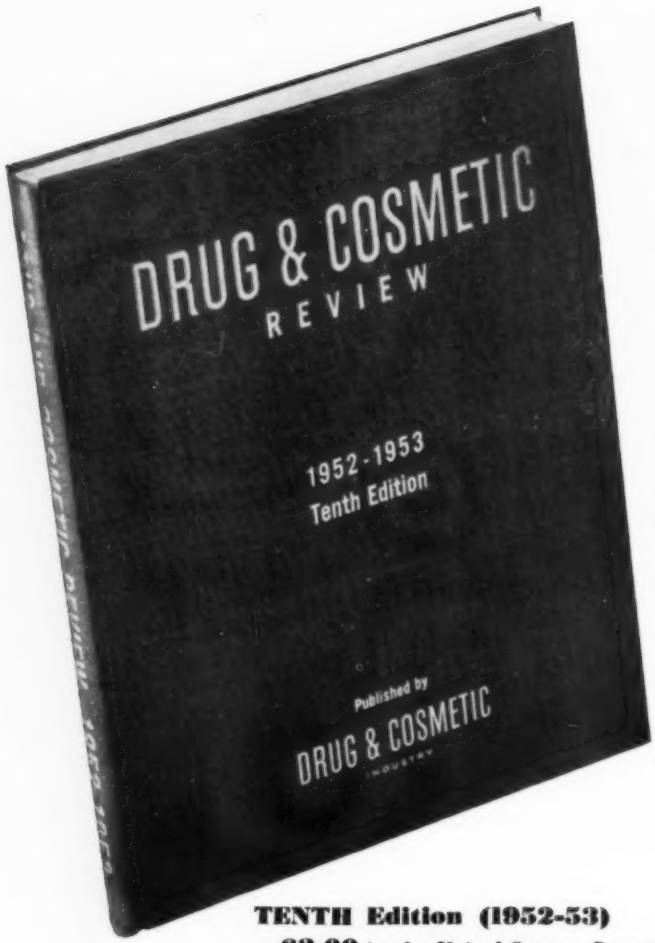

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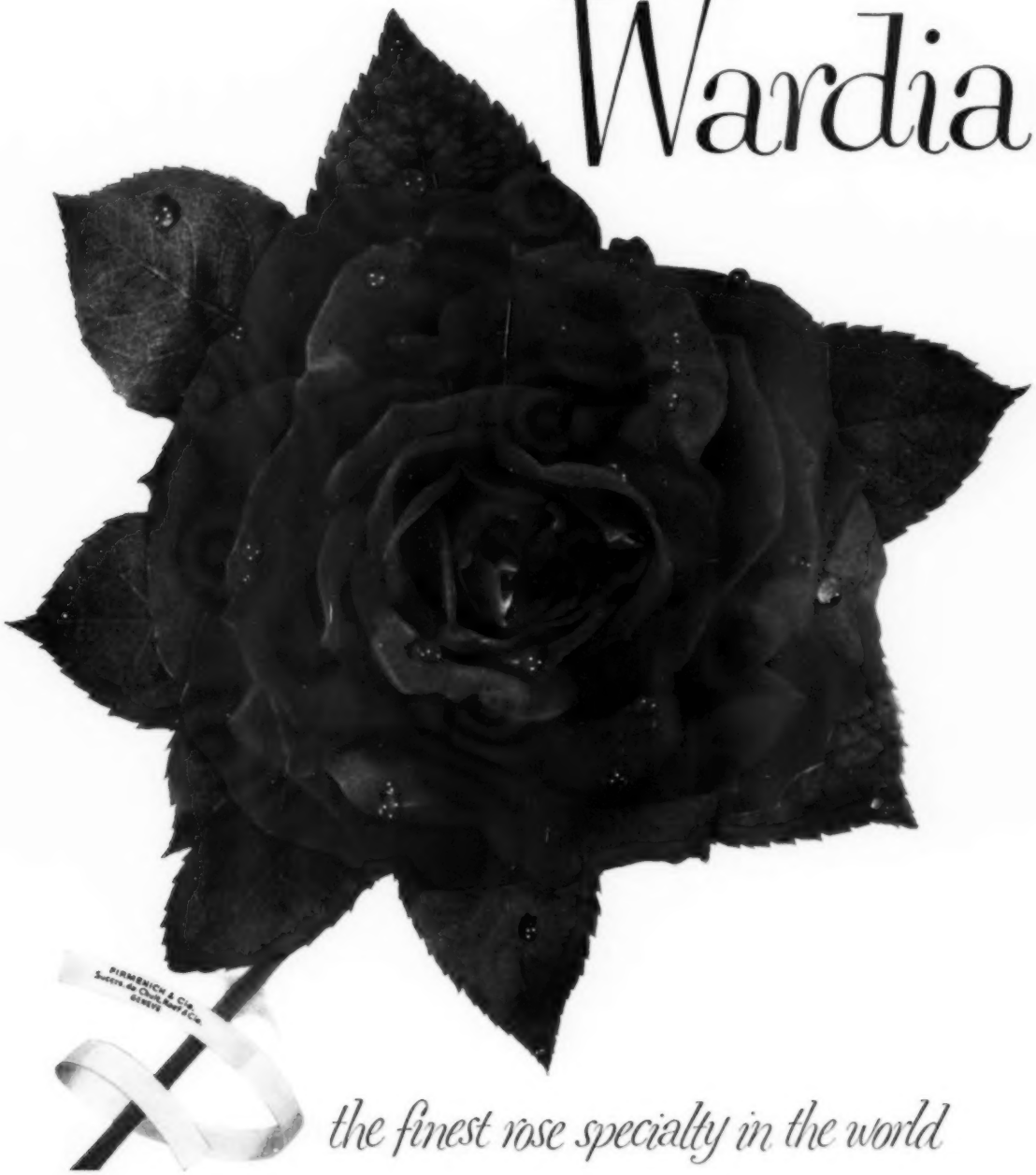

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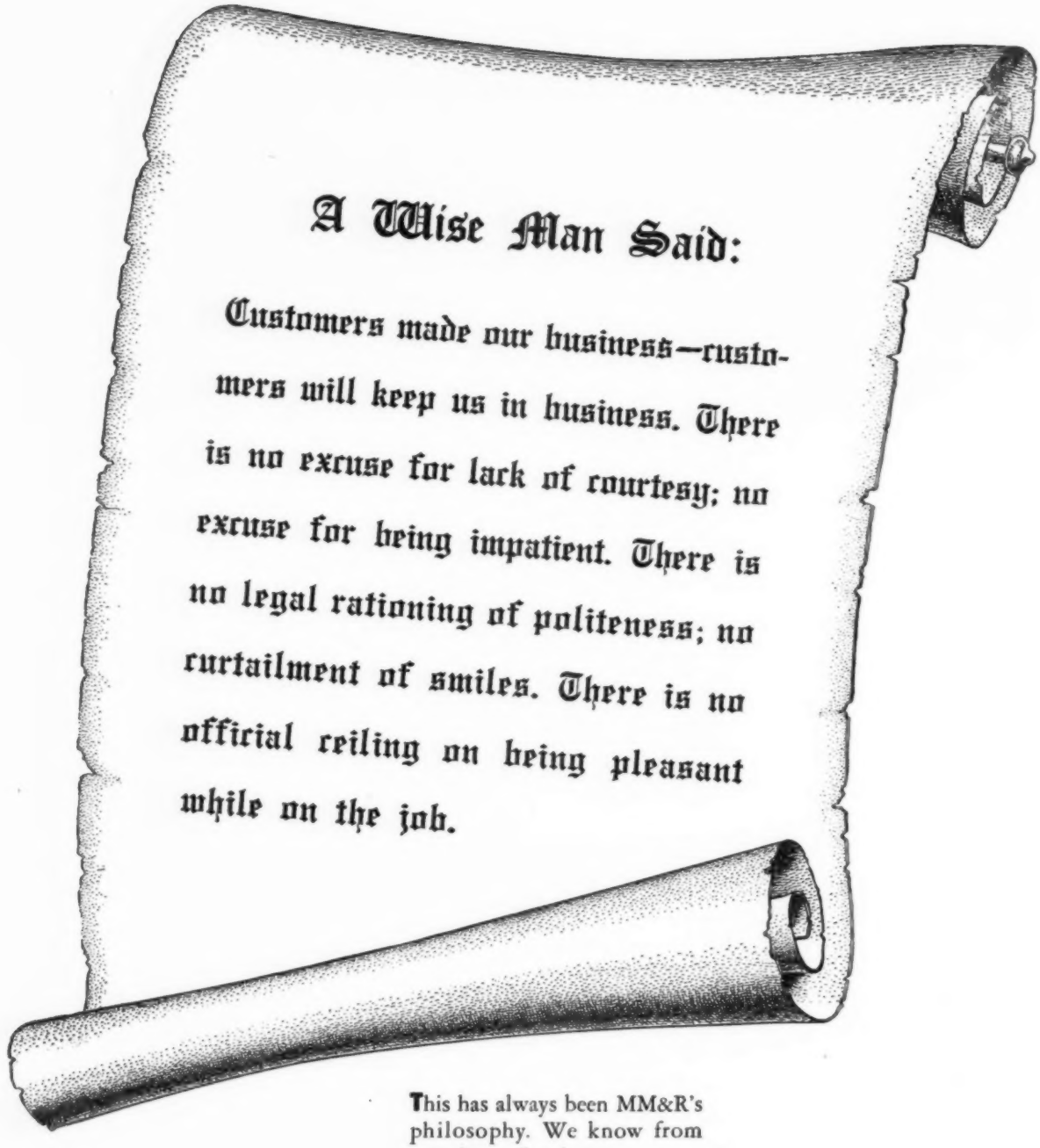
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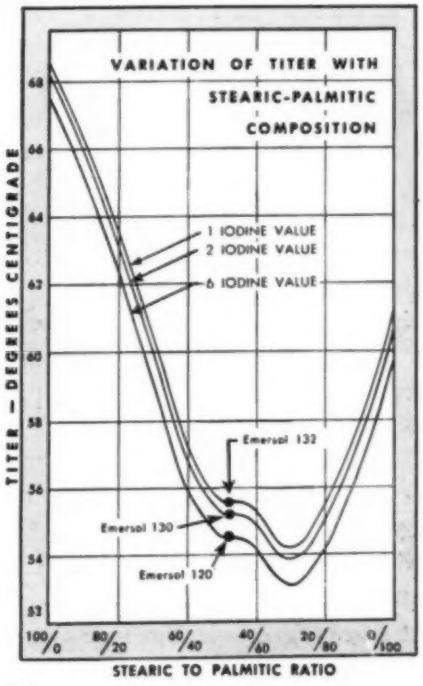

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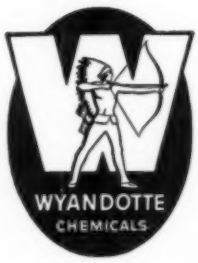

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PURECALS*—Wyandotte's U. S. P. Precipitated Calcium Carbonates — are outstandingly pure and white, of uniform particle size in grade.

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- face creams
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Wyandotte manufactures many products for drug and cosmetic preparations. For data on them, and for help with your formulations, write Wyandotte. *Wyandotte Chemicals Corporation, Dept. D.C., Wyandotte, Michigan. Offices in principal cities.*

Wyandotte is also the world's largest manufacturer of specialized cleaning products for business and industry. Let a Wyandotte service man show you how Wyandotte products for equipment cleaning, germicidal treatment, and maintenance cleaning can help you solve your sanitation problems.

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Chlorinated Solvents • Ethylene Dichloride • Propylene Dichloride • Glycols • Kreelon* (Alkylarylsulfonate) • Diglycols • Carbose* (Sodium CMC) • Naxonate* (A Hydrotrope) • Agricultural Insecticides • Synthetic Detergents Aromatic Sulfonic Acid Derivatives • Pluronics* (100% Active Agent Nonionic Detergent)

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A sedative producer was hysterical!

He was forever frightened by manufacturing problems. They threatened to wreck him completely.

The day he called Strong Cobb he began to relax. For when Strong Cobb manufactures your private formula pharmaceutical, you haven't a production problem in the world.

That's a fact, and has been, since 1833. Raw materials, labeling, packaging and shipping . . . those headaches belong to *us*. *You* concentrate on *sales*.

Whatever shape your product takes, you'll be in *better* shape if Strong Cobb manufactures it for you. May we soothe your nerves?

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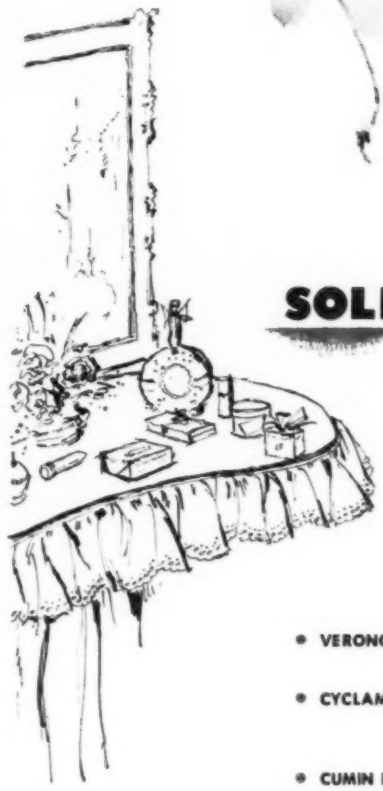

SOLD.....by a finer fragrance!

A search is constantly on . . . a search for that rare scent that sustains its full, fresh fragrance for the magic moment when product and purchaser meet over the counter. Verona research has developed a line of fine chemical specialties which have *proven* themselves decisively in the refinement of many perfumes. Try as little as a fraction of 1% of the products listed below in your present fragrance . . . *Note the "before and after" effect!*

- **VERONOL**.....A single chemical of great power used to achieve the aldehydic top note.
- **CYCLAMAL**.....The accepted raw material for producing that clean, floral fragrance in all types of products, from soaps to the most expensive perfumes.
- **CUMIN KETONE**..To impart the natural floral note to your compositions.
- **RESEDALIA**.....An acetal; as true a base for Reseda Mignonette types as is Phenyl Ethyl Alcohol for Rose. Combined with the Ionones, it produces very interesting and different effects.

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Provides a straight line to the most profitable points of sale.

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A perfume is successful not by chance, not by good luck, but by careful design. There must be good design technically, artistically, and psychologically, to assure its appeal to the market.

The master perfume chemists of van Ameringen-Haebler, Inc. know markets, perfumes and the technical arts of perfumery. Their guidance can help you design your next fragrance success.

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Theophylline

prime producer

Mallinckrodt, one of the first U. S. producers of Theophylline from domestic raw materials, began manufacturing in 1933 and has maintained its position as a prime factor in the production of this valuable drug ever since.

advanced synthetic methods

Today Mallinckrodt Theophylline is produced in a modern plant by advanced synthetic methods developed by Mallinckrodt chemists and engineers (U. S. Patents 2,444,023; 2,533,022; 2,564,351). Latest methods of quality and process control, combined with large scale production, achieve top quality and a high degree of uniformity.

Mallinckrodt's Theophylline plant is devoted exclusively to Theophylline production and is able to supply unusual as well as normal requirements. Warehouse stocks are maintained at St. Louis, New York, and Los Angeles for prompt shipment to any locality.

grades available

Mallinckrodt Theophylline, packaged in 100-lb. leverpak drums and in 25-lb. fiber drums, is supplied in the following grades:

Theophylline USP XIV Monohydrate (Powder)
Theophylline USP XIV Anhydrous

Also available:

Theophylline and Sodium Acetate NF IX (Powder)

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MANUFACTURERS OF FINE CHEMICALS
FOR THE PHARMACEUTICAL INDUSTRY •
SINCE 1867 •

"He keeps adding all the new products to his shotgun proprietary, but it still misfires."

Ammoniated Dentifrices Fail in Promise

Ammoniated dentifrices have failed to live up to their promise and have no special value in reducing tooth decay, according to a report of extensive research studies made by Dr. B. G. Bibby, director of Eastman Dental Dispensary at Rochester, N. Y., and Lt. R. R. Hawes, of the Air Force Dental Corps at Randolph Air Force Base, Texas, and published in the Journal of the American Dental Association.

"There is no satisfactory evidence—notwithstanding the advertising claims—that a dentifrice with a high urea content reduces dental decay," they said.

To evaluate the effectiveness of ammoniated dentifrices, the scientists conducted a one-year clinical and bacteriological study among school children between the ages of 7 and 13. An experimental group of 196 children brushed their teeth with an ammoniated dentifrice while 176 children served as a control group and brushed their teeth with a neutral or cosmetic dentifrice (dentifrices with conventional cleansing properties). All the children were instructed in a proper toothbrushing technic which was carried out under supervision at the beginning of each school day and independently at home in the evening.

It was found that during the test period, the children who used the ammoniated dentifrice were found to develop tooth decay at approximately the same rate as those who used the non-ammoniated dentifrice. Drs. Bibby and Hawes said that their studies indicated that ammoniated dentifrices had little effect on the presence of lactobacillus in saliva. A count of these bacteria in saliva has long been used to measure decay activity.

"No evidence was found that the use of the urea dentifrice altered the number of lactobacilli in the saliva to a greater extent than in the use of cosmetic dentifrices," the scientists said.

Similar findings were reported for a supplemental eight-week study of 75 young women dental hygiene students. The scientists concluded:

"The negative clinical observations and laboratory findings . . . offer adequate grounds for questioning the soundness of the concept that the ammonium ion dentifrices have any value in the prevention of dental decay."

California and Substitution

Substitution on prescriptions would be perfectly legal (even if not ethical) in California if a proposed addition to the Business and Professions Code is adopted as contained in Senate Bill 1402. The section to be added reads:

"4049. Notwithstanding any other provision of law, 'synonym' shall mean any official name or brand name used to describe a drug or combination or mixture of drugs that have the same therapeutic or physiological properties and are of the same strength or potency."

If this amendment means anything it means that even though a physician writes a prescription for a brand-name item, the pharmacist can substitute something else that has, in his opinion, the same physiological or therapeutic properties and is of the same strength or potency. Under these circumstances, a druggist would only be required to carry in stock one make of any particular pharmaceutical preparation, and the choice of the maker of any product would be solely up to him. Needless to say, this sort of activity might be tempered somewhat by the reactions of physicians and patients, but the physicians and patients would have to be on guard at all times.

Vitamins and Minerals and FTC

Dr. Townsend's Own Formula, Vitamin and Minerals, is no longer to be advertised as bringing about a state of health or insuring a long, healthy life, under a stipulation with the Federal Trade Commission. Also to be discontinued are claims that the product contains a

significant amount of vitamin B_{12}; that it supplies the minimum daily requirements of all vitamins and minerals which it contains; that it is a health formula; that there is a deficiency in vitamins and minerals in the diets of any definitely stated percentage of the population requiring the supplemental vitamins and minerals supplied by the product; that the product builds up resistance to cold, damp weather or disease conditions resulting from coldness and dampness; that the product is of benefit in the correction or treatment of conditions such as a tendency to tire easily or nervous irritability except to the extent that it may contribute to the prevention or correction thereof where such conditions are due to deficiencies of vitamins and minerals supplied in adequate quantity by the product.

Proposed State Health Plans

Senators Irving M. Ives of New York and Ralph E. Flanders of Vermont, both Republicans, announced early this month that they would introduce in Congress a bill providing for Federal grants to assist the States in financing voluntary, prepaid health service plans. This is extremely interesting due to the fact that this method may prove to be the approach of the Republican Party toward solution of the problem of the cost of medical care which was brought so strongly to the fore under the recent Democratic administrations. It will be noted that the proposal of these Senators is to have the plans administered by the States with the aid of Federal funds. Also it will be noted that such State plans are to be voluntary in nature and not compulsory as was the Truman-Ewing plan.

APMA Award to Dr. Huggins

Dr. Charles Huggins of Chicago will receive the American Pharmaceutical Manufacturer's Association's 1953 Research Award on March 31 at the annual meeting of the Association in White Sulphur Springs, W. Va. Dr. Huggins was selected by the Scientific and Research Award Committee of the Association, headed by Dr. Martin Lasersohn, executive vice - president of Winthrop-Stearns Inc. Dr. Austin Smith, editor of the Journal of the American Medical Association will present the award.

Dr. Huggins is a master surgeon, a great teacher, and he has made a number of outstanding contributions to medical research. He is especially well known for his work on the beneficial effects of female sex hormones in the management of prostatic cancer and he has demonstrated the value and effect of bilateral orchidectomy in this disease. Dr. Huggins was the first to perform successfully the operation known as bilateral adrenalectomy. He now has a series of advanced cancer cases (prostate and breast) who are doing well since their adrenals were removed. It is anticipated that his laboratory research and clinical work will eventually lead to basic knowledge concerning the relationship of the adrenal glands and the pituitary body to the development of malignancies.

Perfume Trade-marks Defended

Permanent injunctions against Famous Perfumes Company, a partnership, Famous Perfumes Company, Inc., and Ralph A. Whitmore and Phillip E. Green, as individuals and as proprietors of these companies, have been obtained by Lanvin-Parfums, Inc., Chanel, Inc., and Guerlain, Inc., in trade-mark infringement actions brought in the U. S. District Court for the Southern District of California. The injunctions prohibit the defendants from any further use of the trade-marks for any purpose whatever.

Famous Perfumes had been widely advertising and offering over the radio in California at very low prices small ampules of perfume which they indicated were well-known trade-marked products such as Arpege, Chanel No. 5, Shalimar, and many others. The Court permanently enjoined the infringement of these trademarks and in its decree enjoined the defendants from reproducing, counterfeiting, copying, or colorably imitating the names, affixing them to any label, carton, sign, package, or to any materials intended to be used in connection with the sale of any toilet goods including perfumes or for making any use whatever of these names in the sale of their products.

The Court further decreed that they should no longer sell, distribute or dispose or in any way repackage or rebottle perfume or other toilet preparations of these companies under such trade-marks.

Pfizer Facts

Three years ago, Chas. Pfizer & Co. was selling its own labelled products on a limited scale in only a few foreign markets, while now sales of Pfizer-labelled antibiotics through the company's own direct sales organizations account for almost 55 per cent of the company's consolidated volume, and this volume has been increased by more than $60 million, Pfizer President John E. McKeen told the New York Security Analysts Society last month.

"In March of 1950, with an initial sales force of 20 men, the company established the Antibiotic Division to market our then new antibiotic, Terramycin, under the Pfizer label to the drug trade and hospitals, and to the U. S. Government," said Mr. McKeen . . . The Antibiotic Division is now the largest of the company's sales divisions. Its sales have not been restricted to a single product. The Division's objective has been to bring to the medical profession all of the important antibiotics in dosage forms designed to make their use most convenient and effective. During 1952, 15 new elaborations of Terramycin were introduced. Our surveys indicate to us that Terramycin has now assumed a position of leadership among the branded antibiotics. Terramycin oral suspension is now one of the leading specialty prescription items in the domestic drug market."

"Penicillin prices at manufacturers' levels dropped about 40 per cent in 1952," said Mr. McKeen. "However, in recent months the demand for penicillin has increased and we do not believe that there will be further important price reductions during 1953."

In answer to a question, Mr. McKeen said that production costs of the penicillin installations at the Groton, Conn. plant were competitive, while produc-

tion facilities at the Brooklyn had been rendered obsolete.

"Within the last two months an influx of competitive foreign vitamin products has produced cuts in long-stable vitamin prices," said McKeen. "Pfizer also reduced its synthetic vitamin A prices. I do not believe that these reductions will have a significant effect upon the company's 1953 profits; they will be offset in large part by continuing production economies."

Dentists in the U. S.

The latest count of U. S. dentists is 91,638—one for every 1,691 persons—according to the 1953 American Dental Directory published by the American Dental Association. Of these, 84,215 are civilian dentists, and 7,423 are serving in the armed forces and the Veterans Administration. Nearly three times as many dentists are now on duty with the armed forces and V.A. compared with the listings in the last directory published in the fall of 1950. At that time, 2,575 were in the armed forces and the V.A. The latest count shows 4,762 more dentists than were listed in 1950. At that time, the count showed one dentist for each 1,733 residents in the U. S.

The sharply increased military demands are reflected in the distribution of dentists for the civilian population. While the total number of dentists has increased substantially, the proportion of dentists to population has decreased slightly in every region except the Southwest. The Southwest area, including Arizona, New Mexico, Oklahoma, and Texas, has one dentist for each 3,116, compared with one for each 3,145 in 1950. The East Coast and West Coast continue to be served by more dentists in proportion to population than any other parts of the country. The East Coast, including Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania, and West Virginia, leads the nation with one dentist for each 1,425 persons. The Far West, including California, Nevada, Oregon, and Washington, is second with one dentist for each 1,514 persons. The New England region is third with one dentist for each 1,540; the Central States are fourth with one dentist for each 1,659; and the Northwest is fifth with one dentist for each 1,864 persons.

The District of Columbia leads in the U. S. with one dentist for each 1,098 persons. New York leads the states with a ratio of one to 1,135; Minnesota is second at one to 1,344; and Connecticut is third at one to 1,391. Least favorable ratios are for South Carolina at one to 5,477, and Mississippi at one to 4,557.

Drugs in Heart Disease

In combatting heart disease, drugs have been a significant factor in four major medical advances, Dr. Theodore G. Klumpp, president of Winthrop-Stearns, told the Pharmaceutical Advertising Club last month. He listed these as control of rheumatic fever; successful treatment of subacute bacterial endocarditis, reducing it from 100 per cent mortality to less than 10 per cent if treated early; successful prevention and treatment of syphilitic heart diseases; and surgical treatment of congenital heart disease.

"The first three accomplishments were entirely due to the so-called wonder drugs, and the fourth could only be achieved because of the discovery and availability of such drugs as Diodrast to visualize defects in the heart, heparin to prevent clot formation, and other drugs too numerous to mention without which modern, safe and successful surgery would be impossible."

Upjohn Tests New TB Antibiotic

Upjohn Company is investigating a new antibiotic isolated from a soil sample obtained near Kalamazoo, Mich., which has been found to be effective against tuberculosis in experimental mice. Called amicetin, the drug has been found to be active mainly against certain Gram-positive bacteria, while the culture broth from which the drug is crystallized has both good Gram-positive and Gram-negative activity. This is said to be an indication that the culture broth produces antibacterial activity in addition to that of amicetin, and contains additional active antibiotics which have not been isolated.

In the tests on mice the drug did not appear to be as effective as streptomycin sulfate against the particular species tested. Preliminary studies indicate that the toxicity of amicetin to animals varies considerably with the species of animal, and is especially high in guinea pigs.

"By the subcutaneous route it is about forty times as toxic as streptomycin, but on the other hand only about one-tenth as toxic as penicillin to this same species," say Upjohn scientists. "In contrast to streptomycin, amicetin does not appear to cause eighth-nerve damage (deafness) according to the procedure following in the tests."

Information on the drug, on which clinical tests are now being conducted, was given in a communication to the Journal of the American Chemical Society signed by C. DeBoer, E. Louis Caron, and Dr. J. W. Hinman of the Upjohn research laboratories in Kalamazoo. Dr. Hinman and Mr. Caron are chemists, and Mr. Deboer is a microbiologist.

FDA in 1952

During 1952, the Food and Drug Administration reports that it did not reject a single application for the marketing of a new drug and issued only one suspension order. Of a total of 395 new drug applications filed during the year, 271 were for preparations for human use, and 124 for veterinary use. During the period 304 applications were allowed to become effective—194 for human use and 110 for veterinary use.

During fiscal 1952 certifications of coal-tar colors numbered 3,839 batches, representing 4,023,710 pounds. Twenty-eight batches, representing 10,117 pounds, were rejected.

In the enforcement phase, 20.7 million pounds of food were seized, of which nearly two million pounds contained "dangerous substances," more than 17 million pounds were spoiled or contaminated, and 2 million pounds were deceptively misbranded. In the drug and device field twenty seizures were made and 329 cases taken to the Federal courts. Out of 108 criminal actions alleging drug violations, 80 per cent were based on authorized sales or refills of prescription drugs.

It is interesting to note that the main activity of the FDA in prosecuting criminal cases is in the field of sales of drug products over retail counters. This means that in 80 per cent of the criminal actions brought by

the FDA, the manufacturers are not in any way involved. It also means that the FDA uses its inspectors and legal staff, and other facilities to a major extent in enforcing a phase of drug control which should be enforced by the States.

The Courts and Fair Trade

Early this month the New Jersey State Supreme Court handed down the final decisions in certain fair trade cases which were originally started shortly after the U. S. Supreme Court had ruled that the Miller-Tydings Act was not effective in interstate commerce against, non-signers of fair trade contracts. Since these cases are based on conditions as they existed after the famous Schwegmann decision and before the McGuire act was enacted, the decisions handed down are only of academic interest. One of the cases was that brought by Johnson & Johnson and McKesson & Robbins against the Charmley Drug Co. In this case an attempt was made to legalize the use of a fair contract on the invoices which the retailer had to sign to get the goods which he was buying. This was declared illegal since it forced the retailer to sign a contract which he would not voluntarily sign. Other cases were those of Johnson & Johnson, Colgate-Palmolive-Peet, and Lambert Pharmacal Co. against Weissbard Brothers; Burroughs Wellcome Co. against Weissbard Brothers; and Hoffmann-La Roche against Weissbard Brothers. All of these cases were decided in favor of the defendants because of the Schweggman decision which constituted the law at the time the cases were brought.

However, of real interest in the fair trade situation is the decision of the Supreme Court of Georgia which late last month held the fair trade act of that State unconstitutional. The decision arose out of case brought against Grayson-Robinson Stores late last year by Oneida Ltd., New York silverware manufacturer. The Court ruled that "the act of 1937, known as the Georgia Fair Trade Act is null and void since it offends (part of the 1945 state constitution) which provided that 'no person should be deprived of life, liberty or property, except by due process of law.' " Further the Court ruled the act "contrary to and inconsistent with the provisions of the Sherman Act as they were at that time. It consistently offended the supremacy clause, as well as the commerce clause of the Federal Constitution . . ."

However, in New York State, the Court of Appeals—the highest court in the State—unanimously affirmed a supreme court order granting General Eelctric Co. a temporary injunction restraining Masters, Inc., a large discount house, from selling GE products at cut prices.

Scope Products Stipulation

An FTC stipulation signed by Casper Garber, trading as Scope Products Company, New York, provides for discontinuance of advertising claims that Scope Skin cleaner and Scope Medicated Skin Formula will prevent or remove all externally caused blemishes. Other claims to be discontinued are:

1. Through the use of the words "and other externally caused blemishes," or other words or phrases of similar import or meaning, in connection with the word "pimples" that such condition, which may be of a systemic or internal origin, is solely of external origin.
2. Through the use of the words "and other externally caused blemishes," or other words or phrases of similar import or meaning, in connection with the word "acne" or "blackheads" that such conditions are of external origin.

FTC Order Against Mynex Tablets

An initial decision by FTC Hearing Examiner Abner E. Lipscomb orders discontinuance of advertising claims that Mynex Tablets possess weight-reducing properties. The order is effective against Marlene's, Inc., its officers, and its advertising agency, O'Neil, Larson & McMahon, Chicago. Other claims prohibited are:

1. That Mynex Tablets will prevent development of a tired, weak or rundown feeling except when such conditions result solely from vitamin or mineral deficiencies.
2. That their weight-reducing plan is basically different from or superior to other weight-reducing plans requiring a low calorie diet with a dietary supplement. 3. That specific or predetermined weight reduction will be achieved within a prescribed period of time through the use of their plan. 4. That their preparation or plan has been approved for advertising by the Canadian government.

Duplications and The Druggist

Inadequate inventory controls, and promotion of lower-priced initiative products, rather than duplications of pharmaceutical preparations by reputable manufacturers, is largely responsible for the druggists dead stock problems, Alfred J. W. LeBien, director of merchandising for Eli Lilly & Company told the second annual promotion clinic of the Pharmaceutical Advertising Club held last month in New York. During the last ten years the prescription department is the only drug store department in which the ratio of inventories to sales did not increase, according to Mr. LeBien. Since 1940, he said, the prescription department inventories increased 22 per cent, while sales were up 400 per cent. "The picture in the front end of the store is just the opposite," he commented, stating that inventories were up 300 per cent and sales up only 200 per cent.

In the drug store where unsold merchandise is allowed to pyramid for a number of years, this will reach the point at which the profitable prescription department operations will be disrupted, he said. The reputable manufacturer spends enormous amounts of money building up the reputation of his firm and the reliability of his products, he added. "He has established a pattern of product research and development and a plan of professional promotions with the assumption that the retail pharmacist wants more and more prescription business. Unfortunately, in many instances the pharmacist has been unfaithful in keeping the trust imposed on him by the manufacturer and has created his own dead stock inventory."

This can be brought about, said Mr. LeBien, when a druggist stocks and promotes the product of a manu-

facturer who has done no research, promotion, or advertising but sells on price alone. The druggist, he pointed out, thus slows the movement of other similar products from his shelves. "By featuring this substitute, the pharmacist has not only created dead stock, but also has made it possible for the unreliable manufacturer to profit by the promotional activities of the other manufacturers."

Admitting that manufacturers do duplicate products—more frequently for reasons of prestige than for mercenary greed, Mr. LeBien said, "Any firm that persists in the economically unsound practice of adding new products for which it does not create sufficient demand and interest at each level of distribution, will not only lose goodwill, but will create two immediate problems for itself, namely, inventory and the unprofitable use of one of its most expensive tools—that of promotion time."

Doctors' Prescribing Habits

The average physician in private practice today writes 2,517 prescriptions a year, or one for every three patients, says Medical Economics as a result of a nationwide survey of medical practice based on a questionnaire sent to 134,000 physicians. The survey indicates that the amount of prescribing a doctor does may be substantially influenced by the length of time he has been in practice. At any rate, the young doctor (one with less than ten years' experience) tends to write about 70 per cent more prescriptions a year than the medical man with thirty or more years' experience—even though both men treat the same number of patients.

Prescribing habits are also influenced by the size of the community in which a physician practices. In communities under 5,000, it was found that the average number of prescriptions per year per doctor was 2,824; in communities of 5,000 to 49,999, it was 2,948; in communities of 50,000 to 499,999, it was 2,508, and in communities of 1,000,000 and over, it was 1,848.

In investigating the extent of dispensing by physicians it was found that 45 per cent of the doctors surveyed dispense some or all of the medicines they tell patients to take; these dispensing physicians dispense, in the aggregate, 35 per cent of all the drugs they prescribe.

Factors in Fragrance Purchasing

Advertising, publicity, and packaging play only a minor role in influencing both gift and self-purchases of fragrance products, according to a report to the Fragrance Foundation by Mary Bailey, supervisor of consumer research for Richard Hudnut. Miss Bailey said that only 13 per cent of the women interviewed indicated that packaging was an important part of gift purchasing, and only one per cent more said that it was important in self-purchases. In the case of advertising and publicity, it was found that these factors influenced 11 per cent of gift purchases and only 4 per cent of self-purchases. Approximately 79 per cent of the women interviewed said they had bought fragrance for a gift during the past year and, of these, 57 per cent said they bought the particular products because they liked them themselves. On self-purchases it was found that 57 per cent bought an old familiar one they had used before and liked. Forty per cent said they had tried a friend's and liked it, so they bought it for themselves. But 42 per cent—almost half—decided upon a particular fragrance after trying it at the store counter.

More than 70 per cent of the women indicated that they bought one or more of their own fragrances, with nearly 65 per cent buying some of their own cologne or toilet water as compared with only 45 per cent who bought some of their own perfume. Of the total bottles of perfume owned, about 27 per cent were self-purchased, while about 39 per cent of the bottles of cologne and toilet water were self-purchased.

Asked whether they used fragrance as often as a lipstick, 49 per cent said they did. Of the 51 per cent who said they did not, 33 per cent explained that they didn't because they didn't think of it, 16 per cent said they didn't have time, and 18 per cent thought it was inappropriate for work. Women use perfume almost wholly to please themselves. The second reason is to please a certain person, and the third to please others. Only 6 per cent used perfume all the time.

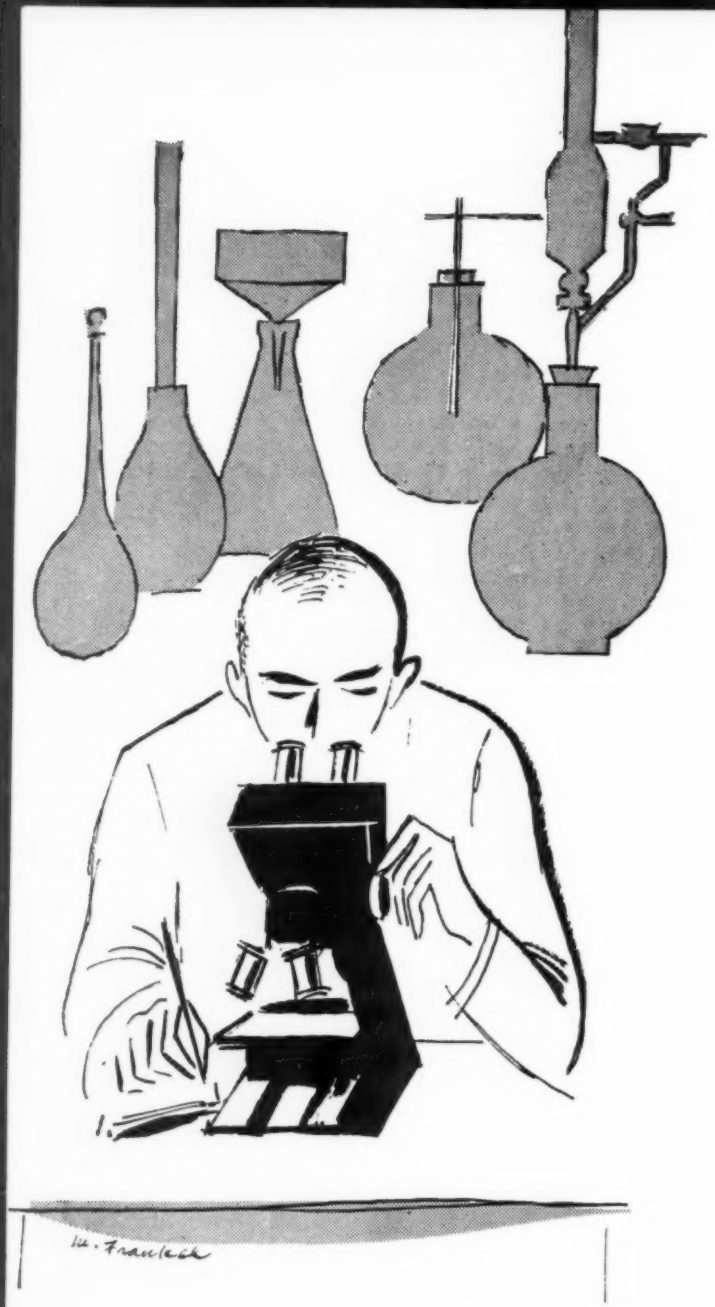
Certificates of Management Excellence

Seven companies which manufacture cosmetics have been awarded Certificates of Management Excellence for the year 1952 by the American Institute of Management. Bristol-Myers, Chesebrough Manufacturing, Squibb, Sterling Drug, Colgate-Palmolive-Peet, Johnson & Johnson, and Procter & Gamble all received the award for the third consecutive year.

FDA Seizes Lilly Products

The Food and Drug Administration has made a seizure of products of Eli Lilly & Company which the administration charges are misbranded. The FDA is careful to point out that no charges of adulteration are involved. However, it appears that the products were labeled with the prescription legends although the products are considered by the FDA to be in the class which should be labeled for over-the-counter sale. Therefore, the FDA contends that the products are misbranded in that they do not give in their labeling adequate directions for use. These directions must be given on all products which are allowed to be sold over-the-counter, and absence of them might cause the product to be considered dangerous. Therefore, it would appear that that is to be a case involving the enforcement of the Durham-Humphrey Amendment to the Food, Drug, and Cosmetic Act. The issue is apparently raised as to whether or not the manufacturer or the FDA has the final say as to whether or not a particular product of any manufacturer should be labeled for restriction to prescription or for over-the-counter sale with full directions for use.

Production involved in the seizures include aspirin, apthalmic ointment, potasium iodide, and rhinitis medicines.



The Delaney* Cosmetic Bill

by S. L. Mayham
EXECUTIVE VICE-PRESIDENT
THE TOILET GOODS ASSOCIATION

Last year I presented the compelling reasons why the Food, Drug and Cosmetic Act in its cosmetic provisions provided adequate protection to the consumer and, at the same time, a constructive and workable law under which the manufacturer and distributor may operate. That address was variously characterized, depending upon the point of view of those who chose to read it and to comment upon it. It was called "constructive," "statesmanlike," "devastating," and it was also called "intemperate," "violent," "ill-considered," and so on. These adjectives applied to my address last year amused me but did not greatly concern me, whether they were favorable or unfavorable. Only one statement with respect to that talk gave me a moment's concern. That was the statement that it contained little, if anything, of a constructive nature. I leave to your judgment whether the exposure and reputation of a bad idea are constructive acts or not.

Having already outlined last year most of the compelling reasons why changes in the law are not necessary and in fact are highly undesirable, I shall not again go over the same ground. Rather, I should like to offer a few suggestions for modification of the law which I believe will help in increasing its effectiveness and will in large measure produce many of the same results which current proposals emanating from other sources would produce without, at the same time, bringing about the far-reaching and perhaps disastrous results which these proposals seem likely to bring.

I should first like to direct your attention to the definition of "cosmetic" contained in Section 201 (i) of the Act and particularly to part (2). Part (2) defines as cosmetics "articles intended for use as a component of any such articles," "such articles" being cosmetics for direct use by the consuming public. This would seem to spell out clearly that any ingredient proposed to be used in a cosmetic at once becomes a cosmetic and that the Administrator is authorized, if not indeed directed, by the statute, to treat such articles as he treats the finished products in his enforcement activities. This, as I pointed out last year, the Administrator has never done excepting in one or two isolated instances, and in those he has done it very badly. Perhaps one of the reasons why he has not proceeded against materials rather than finished products is that the definition in some respects may be faulty. I believe that the wording of the definition which makes ingredients intended for use in cosmetics actually cosmetics under the Act can be improved and strengthened materially so that the Administrator will no longer have any doubt as to what is meant by the definition and will perhaps feel more free to proceed, in instances where he believes an ingredient to be adulterated or misbranded or of a harmful or deleterious character, than he apparently does under the present statute. I shall not at this time suggest language for improving this part of the statute but I would suggest that those of you who are interested

*Address before the Food, Drug and Cosmetic Section, New York State Bar Association, February 20, 1953.

in the cosmetic phases of the law give some thought to strengthening and improving this definition.

I should like now to jump to Section 705 which authorizes and prescribes the sort of publicity which the Administrator may give to cases and activities arising under the Act. Paragraph (a) of Section 705 directs the Administrator to publicize summaries of judgments, decrees and court orders which have been rendered under the Act. This part of Section 705 seems completely adequate, and I should like to commend the Administration at this time for the clear, precise manner in which these judgments, decrees and orders have in the past been publicized. I can suggest only one way in which service to the public and to the affected industries under Paragraph (a) can be improved and that is that these reports should, if possible, be publicized more promptly after the cases have been concluded.

I should like to direct your attention to Paragraph (b) of Section 705, which I consider to be imperfect in many respects and which, during recent years, has been almost ignored by the Administration. Paragraph (b) states that the Administrator "*may also cause to be disseminated* information regarding food, drugs, devices or cosmetics in situations involving, in the opinion of the Administrator, imminent danger to health or gross deception of the consumer."

Some years ago efforts were made by the Administration to utilize this authority in a very constructive fashion when so-called "trade letters" were widely published and disseminated in mimeographed form. These gave the answers to inquiries originating in some cases with the public and in other cases with the industry. They served as a guide to further activities of manufacturers under the Act, or at the very least, presented to the manufacturer the views of the Administration relative to questions which might arise under the Act and upon which the manufacturer could then revise his procedures or decline to revise them, depending upon his circumstances and his attitude toward such information. Unfortunately, the Administration for one reason or another practically discontinued this service which was one of the most valuable that it could render to the affected industries. It seems to me that this was the one single service best calculated to prevent misunderstanding, unintentional violations of the law, or even intentional violations, thereby decreasing the work load of the Administration and the courts brought about by enforcement of the Act.

At the risk of being repetitious, I should like again to emphasize the obvious fact that if violations can be checked at the source, it is far better to do it than to permit damage to the public and to the affected industries by allowing the violations to take place and then proceeding against them. Here again, the Administrator may use the authority contained in Section 705 if he so chooses, to prevent those unfortunate happenings which every so often, no matter how careful anyone may be, bring damage to the public, unfavorable publicity to the affected industries and work and worry for the Administrator.

I would propose that the Administrator not only be given the authority to disseminate such information but that he be required by the law to do so. In other words, I would re-word the first part of that paragraph to say "the Administrator *shall* also cause to be disseminated, etc." I would also spell out a directive to the Administrator in this paragraph, something along the following lines: "Whenever the Administrator shall have reason to believe that a food, drug, device or cosmetic or any ingredient intended to be used therein may, in his opinion, involve imminent danger to health or gross deception of the consumer, he shall immediately publicize such fact along with such information as may have led to his conclusion to the affected industries." I would also direct the Administrator in this paragraph that notices of such situations be sent to the manufacturers of the products involved, to the suppliers of any suspected materials, to the trade press in the industry and to the trade associations operating in the industry. An amendment of this sort and action of this sort by the Administrator would go far to warn the industry, but more particularly the suppliers of raw materials to the industry, not to rush into production and sale of articles which may be damaging and, in my opinion, would also relieve the Administrator of a great burden of work in preparing and submitting to the Department of Justice cases involving products new to the market, whether they be finished goods or raw materials.

It would force the Administrator to act promptly when he finds suspect raw materials and not to wait until serious damage had been done. In recent cases information available to the Administrator and in fact actually existing within the Administration, could have been placed in the hands of those who subsequently used certain raw materials in their formulation with bad results. Doubtless we would not now be faced with ill-judged proposals for amendments had the administrator been compelled to make his knowledge public in advance. But, under the present law, he did not choose to do so and the law did not compel him to, as I believe it should.

Again I have not worked out precise language for such an amendment and I would suggest that you consider just how it might be worded so as to be most effective.

These are the only two changes which I would propose to the present law. I believe that they would most effectively prevent many of the unfortunate accidents which take place whereby consumers are harmed and the reputation of the industry is damaged. I believe we need no further amendments.

Now, I suppose, many of the members of this audience expect me to comment on Mr. Delaney's bill introduced into this session of Congress as H.R.-2244. I shall do so, but I shall attempt to be concise and not take up too much of the Section's time with comments on a bill which would seem to have very little chance of success in its present form. My first comment has to

(*Continued on page 414*)

Pharmaceutical Aspects Of Vitamin B_{12}*

by Walter C. Gakenheimer
MERCK & CO., RAHWAY, N. J.

Vitamin B_{12}, which was discovered less than five years ago by Folkers and his associates[1], is a red, crystalline, tasteless powder, soluble in water to the extent of 12 milligrams per cc. at 25° C. It is practically non-hygroscopic at 50 per cent relative humidity. It darkens at 210-220° C., but does not melt below 300° C. The U.S.P. specifies that it must not lose more than 12 per cent on drying and the anhydrous portion must be 95 per cent pure.

The commercially available forms of vitamin B_{12} are the U.S.P. crystals, triturations of these U.S.P. crystals in mannitol, dicalcium phosphate, and sodium chloride, and "concentrates" or "solids." These latter are mixtures containing vitamin B_{12} activity derived from streptomyces or other fermentation extractives which have not been purified to the degree of the U.S.P. crystals.

This review of the pharmacy of vitamin B_{12} includes information developed in our Pharmaceutical Research Laboratories, some of which has been reported previously by Macek and Feller[2], and studies carried out with the cooperation of the Control Division.

*Presented before Research and Development Section, American Drug Manufacturers Association, November 6, 1952.

I. General Compatibilities

Before considering the individual classes of pharmaceutical preparations, many of the compatibilities and incompatibilities of vitamin B_{12} may be generalized as follows:

A. Vitamin B_{12} can be formulated in most dry preparations, such as tablets and capsules, to maintain practically complete stability.

B. Compatibility can be expected in liquid preparations (and, of course, in dry preparations) under usual formulation conditions in the presence of:

- Thiamine Hydrochloride
- Riboflavin
- Niacin
- Niacinamide
- Pyridoxine Hydrochloride
- Calcium Pantothenate Dextrorotatory
- Vitamin A Palmitate
- Vitamin D_2
- Vitamin D_3
- Folic Acid
- The Tocopherols and Their Acetates
- Benzoic Acid
- Benzyl Alcohol

Butyl-p-Hydroxybenzoate
Calcium Glycerophosphate
Calcium Phosphate Dibasic
Calcium Stearate
Choline Bitartrate
Choline Chloride
Choline Dihydrogen Citrate
Corn Starch
Coumarin
Ethyl Alcohol
Ferric Ammonium Citrate
Ferric Chloride
Ferric Glycerophosphate
Gelatin
Glycerin
Liver Extracts, Pretested for Compatibility
Magnesium Stearate
Manganese Glycerophosphate
Mannitol
Methyl Cellulose
Methyl p-Hydroxybenzoate
Methyl Salicylate
Oil of Cognac Green
Oil of Lemon
Oil of Orange
Phenol, Redistilled
Propyl p-Hydroxybenzoate
Propylene Glycol
Saccharin, Refined
Salicylic Acid
Sodium Chloride
Sorbitol
Stomach Extracts
Tween-20
Tween-80

C. Instability to varying degrees, depending on such factors as pH, can be expected in aqueous solutions in the presence of reducing agents, such as ferrous salts, ascorbic acid, sucrose, dextrose, and vanillin, and in the presence of aldehyde-containing flavors such as many of the synthetic fruit flavors. Some lots of acacia have been found to cause vitamin B_{12} decomposition, presumably because of the presence of oxidases and peroxidases.

D. The tenacious affinity of talc for vitamin B_{12}, although not technically an incompatibility, precludes its use as a filter-aid or as a component of the lubricant in tablets or hard-shell capsules, particularly in view of the assay difficulties which it sometimes produces. Other filter-aids should be used with caution, for the same reason.

E. The compatibility of individual components of a given formulation with vitamin B_{12} can be quickly confirmed by heating for four hours at 100° C. a solution of vitamin B_{12} in a suitable buffer solution and also a second solution, identical except for the addition of an equivalent quantity of the substance under test.

We have found satisfactory an acetate buffer solution prepared by dissolving 5.44 grams of sodium acetate (tri-hydrate) crystals and 0.60 gram of glacial acetic acid in sufficient distilled water to make two liters.

If the assay of the two solutions differs by no more than 10 per cent, the substance under test can be presumed to be compatible with vitamin B_{12}.[7] It should be pointed out that this type of test produces excellent positive information of compatibility. Assays varying by more than 10 per cent, however, do not always indicate incompatibility at room temperature, since the substance under test may change sufficiently at, for example, 100° C. so that its decomposition product would cause vitamin B_{12} decomposition, whereas at room temperature or 40° C., the substance might be completely stable and compatible.

II. Parenteral Solutions

Parenteral solutions of vitamin B_{12} can be classified into three groups:

A. *Single-dose all-glass ampuls*

Normal saline solution, the pH of which has been adjusted to 4.5 to 5.0, has proven to be the most popular solvent. The vitamin B_{12} (calculated on the anhydrous basis) should be dissolved in the normal saline solution and immediately sterilized by filtration through a 03 porosity Selas Candle. The Selas candle must be autoclaved, followed by appropriate rinsing with water, prior to use. This immediate filtration is necessary to prevent bacterial growth with consequent loss of potency during the filling procedure. The solution is collected in sterile bulk containers and aseptically subdivided into previously washed and sterilized Type I glass ampuls. They should be sealed and immediately autoclaved for 20 minutes at 120° C.

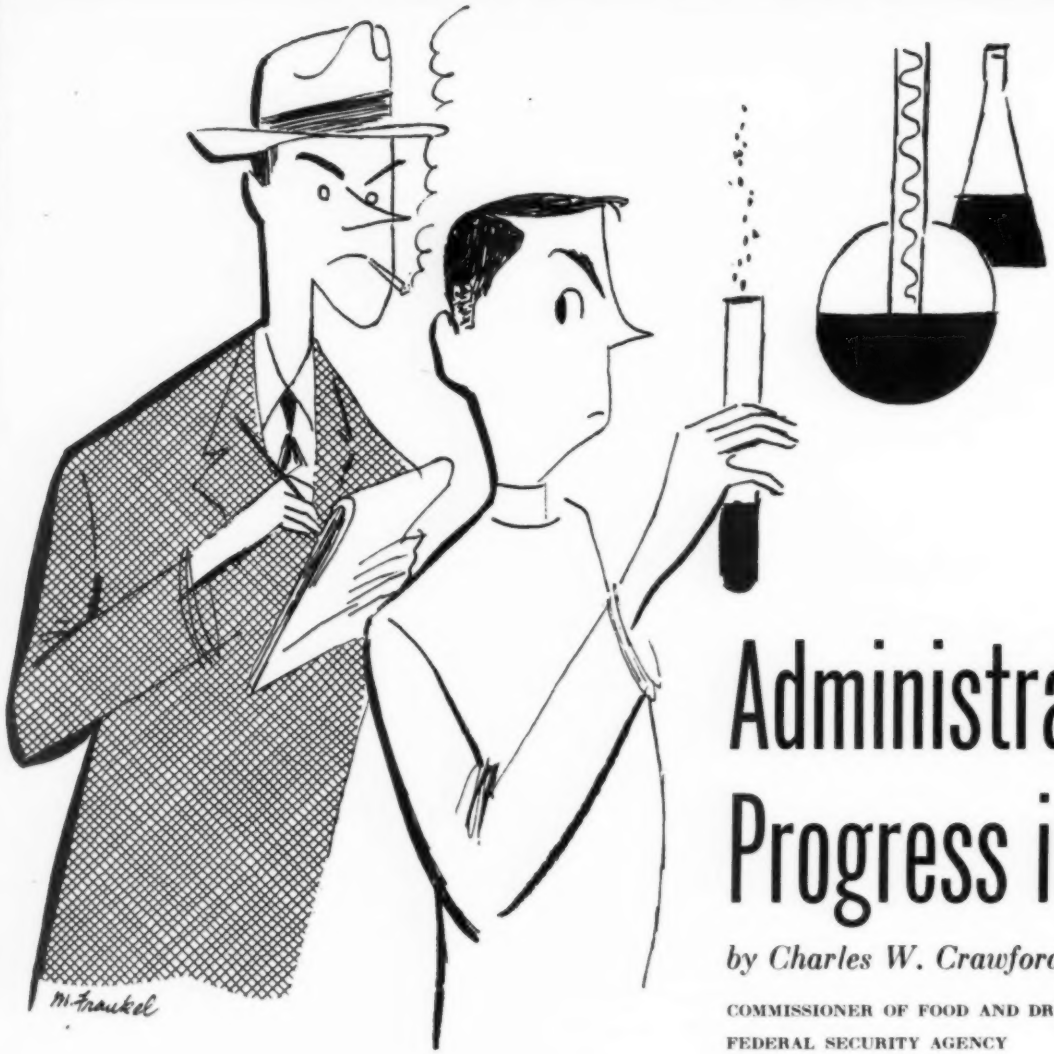
Solutions prepared in this manner and containing up to 1,000 micrograms of vitamin B_{12} per ml., have been stored for two years at room temperature with no loss in vitamin B_{12} content. A five per cent overage (calculated on the anhydrous basis) has been found to be adequate.

B. *Multiple-dose vials*

Normal saline solution, the pH of which has been adjusted to 4.5 to 5.0, has again proven to be the most popular solvent, although 0.02 M acetate, 0.02 M phosphate, and 0.02 M citrate buffer solutions have been successfully used. In fact, 0.02 M citrate buffer in normal saline solution has been found to be particularly useful to minimize the slight shift in pH which can occur in the absence of buffer.

The solution is made as described in the preceding section, with the additional inclusion of a bacteriostatic agent; two of the better ones in our experience are benzyl alcohol or redistilled phenol. Heat sterilization of such solutions, however, is not recommended. Instead, they should be subdivided into previously washed and sterilized vials and prepared, sterile stop-

(*Continued on page 416*)



Administrative Progress in 1952

by Charles W. Crawford

COMMISSIONER OF FOOD AND DRUGS
FEDERAL SECURITY AGENCY

Of the pending legislative problems the Federal Security Administrator has had opportunity to consider only that relating to factory inspection. What I shall say about other problems and proposals for their solution cannot be construed as reflecting the views of either the Federal Security Agency or the National Administration. I need hardly point out, however, that any proposed amendment of the Federal Food, Drug, and Cosmetic Act must pass not only the test of desirability on its merits, but also a rigorous scrutiny of its cost.

It is hardly necessary for me to say that our most urgent legislative need is the restoration of factory inspection as a right of the people rather than a courtesy of the factory manager. This amendment will obviously make for more effective use of whatever we can spend for enforcement.

Disappointing as the Cardiff decision was, much of its aftermath has been deeply gratifying. The press—both general and trade—have been almost unanimous in calling for corrective legislation and have displayed a clear comprehension of the fundamental role of factory inspection as an enforcement tool. We received letters immediately from many manufacturers welcoming our inspectors to continue visiting their plants. Local and State enforcement agencies offered their assistance. Spokesmen of most of the trade associations of the food, drug, and cosmetic industries assured their support of prompt remedial legislation.

We know that this reaction stems from an intrinsic desire to hold on to what has proven good for consumer and industry alike. We see in it also a vote of confidence in our inspection staff as a whole, based on its conduct during the past 14 years when they believed that they had the right to inspect factories—and most manufacturers thought so, too.

On February 6 Senator H. Alexander Smith and Representative Charles A. Wolverton introduced identical bills (S. 835 and H.R. 2769) recommended by Mrs. Hobby in letters to the President of the Senate and the Speaker of the House. A similar bill had earlier been introduced by Senator Hubert H. Humphrey

*Delivered at Eighth Annual Meeting of Section on Food, Drug and Cosmetic Law of the New York State Bar Association, New York, N. Y., February 20, 1953.

(S. 601). These bills would change the language of section 704 of the Act by simply substituting "after first giving written notice" for the present words "after first making request and obtaining permission." The President, in his State of the Union address, called for prompt action to protect the general consumer. I believe it obvious that Government and industry should join in vigorous effort to obtain early enactment.

The Select Committee of the House of Representatives appointed to investigate the problems of new chemicals in foods and cosmetics concluded their hearings early in 1952 and in June issued reports recommending consumer protection controls similar to those now in effect for new drugs. The committee also recommended expansion of cosmetic safeguards in a number of aspects that will be discussed more fully by the Committee Counsel, Mr. Kleinfeld, later this morning. Representative Delaney introduced bills (H.R. 2244 and H.R. 2245) covering these recommendations on January 30.

There have been several proposals made to Congress relative to reorganization plans concerning the Federal Security Agency. The major one of these will, as announced recently by President Eisenhower, be submitted to Congress in the fairly near future. This plan would transform the Federal Security Agency into an Executive Department of the Federal Government. The normal procedure would be for the Congress to consider the Administration-sponsored reorganization plan first. As to what is the position on such reorganization proposals as already have been made or may be made by members of Congress, I do not know, but I am sure that no change will be made without mature and factual consideration of matters affecting the Food and Drug Administration.

Unfortunately, I cannot report progress in building up a force commensurate with our obligations. In common with so many others, we have had to do more and more with less and less. We have only 205 inspectors on the enforcement roll and 11 on certification, a total of 216, in contrast to a peak of 267 in both groups in late 1951. The number of other employees is geared to the number of inspectors, so we had to reduce our rolls of chemists, bacteriologists, physicians, and others to meet reductions in appropriations, increased salary scales, and a ceiling on the amount of funds that could be spent on personal services. When I appeared before the Senate Appropriations Committee last February, I stated that it would take our inspectors 9 years to cover every establishment producing or warehousing the commodities subject to the Food, Drug, and Cosmetic Act. For every lot that we see produced or sample and examine, there are more than 1,000 that we can't cover. We believe that substantially more than the minute fraction of one per cent coverage now given would yield rich returns to the public and to legitimate industry. Important to public welfare as may be some of the proposed legislation I have discussed, I believe there is even greater need for more adequate facilities to enforce the law we now have.

In saying these things I am in no sense unmindful of the pressing need to approach and then to achieve a balanced budget. I am also aware of the tendency of each bureau chief to think his work deserves top priority. If those who have the broader responsibility decide that strengthening of food and drug enforcement must be delayed, we will, of course, continue to do the best we can with what we are permitted to have. But my report to you would be incomplete if it omitted reference to the staff shortages that keep us from doing so much of what ought to be done.

One of the most difficult phases of administration is the deployment of available resources to achieve the most effective results. A continuing study and adjustment of our own organization and procedures to improve efficiency is only one part of the problem. We must keep abreast of what is going on in the affected industries and of new problems of compliance. We have devoted increased effort to facilitating communications between ourselves and the interested industries. We have appointed in each of the 16 field districts consumer consultants qualified to ascertain and report the views of consumers in their respective communities. They supply us authentic information about consumer habits, expectations, and preferences in regard to labeling, purchase, and use of foods, drugs, and cosmetics. With the sum total of information gained from these varied and comprehensive sources we face the question: From what areas of coverage can man hours be diverted into new and more productive projects? With a shrinking enforcement staff we cannot hope to increase coverage across the board. I am glad, however, to report progress in concentrating our efforts in the areas of greater need.

Eighty per cent of our criminal cases on drugs last year were brought against firms and individuals charged with illegal retail sales. Each case was supported by a history of acts detrimental to the community. Many of the purchasers had backgrounds of juvenile delinquency, or hospital or police records, that indicated use of barbiturates, amphetamines, and other prescription drugs for non-medical purposes.

We have carried out for many years a campaign of education—assisted by National trade associations and State pharmacy groups—to apprise every pharmacist of his obligation to limit his sales of prescription drugs to proper uses. Now, with the wide publicity given to the passage of the Durham-Humphrey Amendment and the explicit labeling it requires, those who formerly pleaded ignorance of the law have no further excuse. Illegal sales in the future will be deliberate. Attempts to avoid detection will be increasingly determined. Our inspectors have already been subjected to physical violence from underworld characters who have persisted in illegal operations. It is interesting to note that they are not protected, as narcotics agents and other Federal investigators are, with a Federal law prohibiting physical attack.

(*Continued on page 396*)

Contour Lotions

by Harry Hilfer

There has recently appeared on the market a new classification of cosmetic products which is designed to correct sagging tissues and minimize the wrinkles which come with age. There are several methods by which such corrections are possible and without attempting to describe any of the products now on the market, the discussion which follows will attempt to show how preparations with similar functions may be made.

These preparations may be made as two-phase systems or as emulsions which are homogeneous. The two-phase system must necessarily have incorporated in it an emulsifier which would cause the two phases to mix intimately after shaking even though a separation may take place on standing; and a stronger emulsion would be needed for the homogeneous emulsion. Incorporated in these systems would be either an astringent or a substance capable of forming a film which would contract on drying or both. Astringents are well known and there is no good reason for their further discussion. This article will therefore be confined to the use of the films.

Probably the best known of these compounds would be the various cellulose derivatives. Ethyl cellulose is soluble in alcohol and a solution of it in this solvent is miscible with many of the material oils. These same oils may also be used as plasticizers for the film. It would therefore become possible to use an ethyl alcohol solution of ethyl cellulose in conjunction with cottonseed or olive oil to form a two-phase system which after application would leave a film—which would contrast sufficiently on the evaporation of the alcohol to tighten the tissues to some extent. The ethyl cellulose would also act as a temporary emulsifier. In addition, the alcohol solvent could serve as a vehicle for a large number of astringents if such an addition is deemed desirable. Such a system would also serve to introduce a film which would not readily be affected by water.

As previously stated, this method of application of a film former has not been tried—as far as I know—and anyone interested should carefully check for possible bad skin effects because of the continued use of concentrated alcohol. The alcohol is diluted somewhat by the presence of the oils and it would be expected that

the dehydrate effects on the skin would also be lessened, but a careful check should be made.

Water-soluble cellulose derivatives, for the reasons stated above, would appear to be safer for use. Methyl cellulose, the best known example of this type, is soluble in water in the use concentration desired and is used presently as a viscosity builder for lotions. There are various grades available which range in viscosities produced in a two per cent acqueous solution from 15 centipoises to 5,000 centipoises. It therefore becomes possible to produce almost any desired viscosity with any desired film-former concentration. For example a higher concentration of a low viscosity methyl cellulose will produce a product with no greater concentration necessarily, than a lower concentration of the higher viscosity methyl cellulose. Because of this range, a greater latitude is possible in formulation, since the film-forming concentration in the product is not necessarily inhibited by too high or too low a final viscosity.

The emulsifiers used in emulsions of this type may be soaps or other anionic or non-ionic emulsifiers. Any one of a large number of oils may be added to provide a desirable finish to the film so that it may not appear to be too dry. If it is thought advisable, astringents may also be added, or other substances, which might be thought to enhance this type of product.

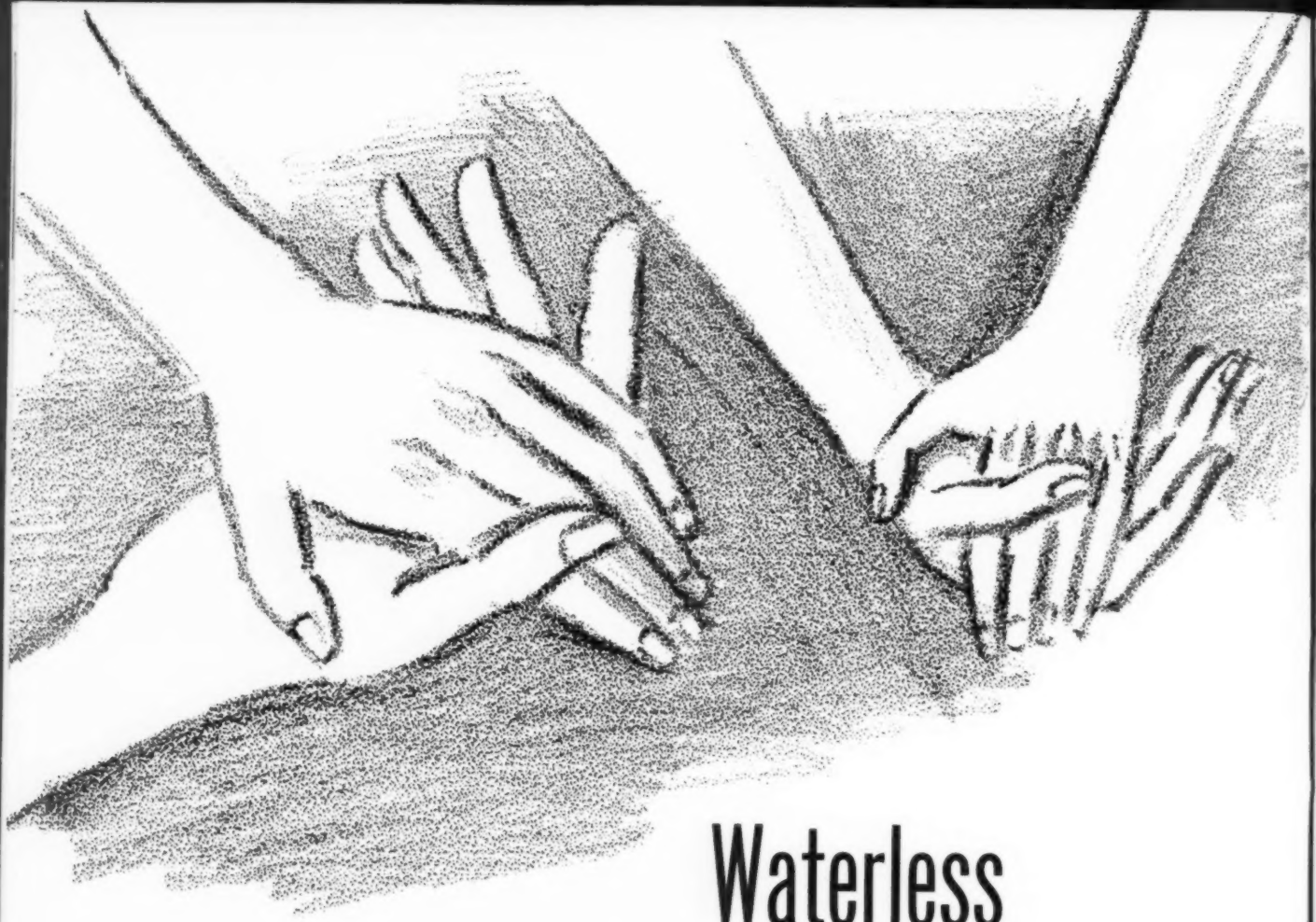
Other substances which may be possible for use as film-formers include carboxy methyl cellulose, which in some respects is superior to the methyl cellulose. Methyl cellulose, for example is thrown out of suspension if the' mixture is too hot. Indeed the directions for incorporating it into water include cooling to a low level to assure complete solution—carboxyl methyl cellulose does not suffer from this defect, but on the other hand does not seem to form as good a film as does methyl cellulose. It is generally thought that CMC is better able to enhance the stability of the emulsion.

Another good possibility would be the use of Polyvinyl alcohols. They are readily soluble in water and may be incorporated much the same as the cellulose derivative.

Our discussion so far has been confined to the synthetic gums, but there is no reason to believe that the natural gums may not do as well. The one factor, however, that influences against their use is that there is a problem in control caused by the variations from batch to batch. This is an old story to most of us and one we are all aware of. However some of the natural gums are possessed of properties—particularly that of the pleasant "slip"—which do not seem to be present in the synthetic gums. There is no reason in most cases to bar their use in conjunction with the synthetic gums, so that advantage may be taken of *this good functional properties* of both. There is always an incompatibility possible, but this would not be a factor if a non-ionic synthetic gum such as methyl cellulose were used in conjunction with a natural gum. The big advantage the synthetic substances have however, is the availability of different grades for different viscosity requirements which is of course not found of the natural gums. The addition of small amounts to introduce the desired "slip" is feasible however.

Further work on preparations of this type is in progress and there is no doubt that in time improvements will probably be made both in form and in its mechanics. The present popularity of these products—which are pointed towards the middle-aged and older women reflect a trend towards this market which is being given greater emphasis during recent years. It has not been until recently that cosmetic manufacturers have given any thought to the increased number of people in the middle-aged, and what was once considered, old catagories—due to the increase in life expectancy during recent years. This trend should continue with increased work in medical research so that in time women with aging skins should become the largest single group buying cosmetics. I should think that future developments would be pointed towards the correction of deficiencies which creep up on us with age, and that product development for this classification would be well worth while.

The course that these developments will take are entirely problematical at this time, but I believe that products such as the contour lotions—even if they might not be the whole answer—are a step in the right direction, since they do not claim or attempt a correction by medical means but rather by purely mechanical methods and by manual manipulation.



Waterless Hand Cleaners

by Milton A. Lesser

Waterless hand cleaners are again coming in for considerable attention. These products, so-called because they require no wash or rinse water to do a good cleansing job, have appeared on the market in increasing numbers during recent years.

Of course, waterless hand cleaners are not newcomers. Their development coincides with the introduction of the automobile. In the early days of poor roads and frequent repairs far from washing facilities, these waterless cleaners offered a convenient and fairly effective way of removing dirt, grease and grime. With the advent of paved highways, service stations, tow-car service, and the like, the need for waterless hand cleaners seemed to disappear.

It is surprising therefore that, as indicated in several patents, some of the new interest in these products has been sparked by leading oil companies and gasoline suppliers. Also noteworthy is the fact that one well-known manufacturer of auto-care accessories has just added a waterless hand cleaner to his line of products. Similarly indicative is the recent availability of single-use, throw-away waterless cleaning kits containing small tubes of cleanser and paper wipe-off towels.

However, the market for waterless hand cleaners is no longer limited to motorists. The products are not only being aimed at more varied types of users, but are being designed to remove more varied types of dirt. Thus, one typical product is recommended for removing grease, grime, ink, paints, tar, glue, cements and many other types of stubborn soil and stains on the hands. Such a product is said to be useful to mechanics, machinists, carpenters, plasterers, bricklayers, plumbers, servicemen and factory workers. In this connection it should be noted that one manufacturer has developed a new type of portable "waterless washstand" designed to offer hand washing facilities in factories, garages,

mines and other places where running water is not available. The portable unit, which consists of dispensers for waterless cleaner and paper towels and a receptacle for the soiled towels, may be set or relocated in any part of a plant, as needed.[1]

In addition to the large industrial market, manufacturers of waterless hand cleaners are also viewing the possibilities of placing their products in offices and homes. Some products have a special appeal for office workers who use waterless hand cleaners to quickly and effectively remove carbon paper and ink stains without the need for scrubbing with abrasive soaps. In making their bid for the home market, manufacturers point out that waterless cleaners efficiently remove the soil that gets on the hands while working or puttering about the house, in the garden or in the hobby workshop. Some cleaners fill the home-user's need, by providing good stain-removing action plus desirable emollient properties. One product further heightens its appeal by the inclusion of chlorophyll in the formula!

In addition to providing an efficient cleansing action against varied types of soil and grime, a waterless hand cleaner must be nonirritating. Recognizing the importance of this characteristic, many formulators strive to prepare effective yet bland products. As a result, some of the modern waterless hand cleaners compare favorably with cosmetic hand creams with regard to emollient action and skin-protective effect against chapping and weathering.[2]

From the standpoint of application, these products may be divided into two main groups. In the first and older group are the cleaners that are applied to the hands, rubbed or kneaded thoroughly into the skin to loosen and free the dirt, and are then wiped off with a cloth or paper towel. In the second group are preparations which, on continued rubbing, dry on the skin to form granular or filing residues with the dirt. These residues can be brushed or dusted from the skin without recourse to a wiping towel or cloth.

Waterless hand cleaners are provided as pastes, thin creams or liquids. From the standpoint of composition, they may be divided into four main classes. In the first class are preparations containing soap or a synthetic detergent as their chief active ingredient. Cleaners in the second category rely on solvents for their effects. The third class comprises preparations that are very similar to the cosmetic cleansing creams used by women to remove make-up and the like. The fourth and most modern group includes cleaners based on, or containing, various thickening agents or film-forming materials. Of course, a fifth group could be added, consisting of miscellaneous and more specialized waterless hand cleaners.

The first waterless hand cleaners probably consisted of nothing more than a slightly perfumed soap gel. Later, various adjuncts were included to impart improved action and appearance. A small proportion of ammonia was often included to heighten the cleansing effect and occasionally other detergent aids were incorporated. Mild abrasives, such as powdered pumice and fine sawdust, were added as mechanical scrubbers. The inclusion of a hygroscopic agent, like glycerine, served not only to prevent drying of the cleaner, but provided an emollient action as well.

One frequently cited formula for a soap-based waterless hand cleaner makes use of a number of such adjuncts. Originally described in a French patent,[3] it consists of:

Agar	**2.0 parts**
Psyllium	**3.0 "**
Glycerine	**50.0 "**
Sodium carbonate	**50.0 "**
Soap, soft	**50.0 "**
Ammonia	**25.0 "**
Javel water	**5.0 "**
Water, distilled	**815.0 "**

Considerably less complex and more modern is the following illustrative formula[4] for making a waterless hand cleaner:

Tallow soap chips (88-92 per cent)	**12.0 per cent**
Water	**73.0 " "**
Mineral oil, white	**5.0 " "**
Sodium silicate	**10.0 " "**

Dissolve the soap in the hot water, add the silicate and mix. After cooling, add the mineral oil and a suitable amount of an appropriate perfume (e.g. lemon type).

As might be expected, synthetic detergents have also found employment in the formulation of waterless hand cleaners. In some instances, the synthetic is advantageously combined with soap. This is shown in the following composition[5] which yields a soft paste suitable for filling collapsible tubes:

Soap chips, white	**40.0 parts**
Alhyl aryl sulfonate (Nacconol NR*)	**10.0 "**
Water	**500.0 "**
Water-soluble perfume	**1.0 part**

(*National Aniline Div., Allied Chemical & Dye Corp., New York, N. Y.)

Solvent-containing compositions rate high among waterless hand cleaners. Since much of the stubborn dirt on the hand consists of grease, oils, tar, asphalt, ink, paint and similar water-insoluble grime, solvents are employed to facilitate the cleaning process. Deodorized kerosene is probably the most frequently used solvent, but various other agents are employed in waterless cleaner formulations. In selecting the solvents, due consideration must be given, of course, to such factors as toxicity, action on the skin, and flammability.

Since solvents have a tendency to defat and dry the skin, many waterless cleaners contain emollients to combat these undesired effects. Lanolin and related compounds are commonly used to offset the harsh effect of the solvent. However, petrolatum and various oils are also employed to buffer the solvent action and protect the skin. (*Continued on page 408*)

TONY LINK PHOTO

Chlorophyll in Internal Medicine*

by F. Howard Westcott, M.D.

Since my first report in 1950[1] on the use of chlorophyll fractions (magnesium/sodium chlorophyllins) for the control of body and breath odors, several confirmatory studies have been published. Unfortunately as often happens when a large commercial utility can be realized from a product, there have been cases where copywriters have grossly exaggerated the therapeutic claims made by the scientific investigators of chlorophyll.

It is my purpose now to bring some of the original observations and subsequent studies up to date; and to outline the known therapeutic uses and limits of these Westcott-processed magnesium chlorophyllins for internal use and sodium/copper chlorophyll fractions for topical application. Extensive animal and clinical research with sodium/copper chlorophyll derivatives, which have been approved by the Council of Pharmacy and Chemistry of the A. M. A., have proved conclusively the effectiveness of these agents for topical use. In the practice of medicine, I have

*Presented at Eastern Scientific Section, American Pharmaceutical Manufacturers' Association, February 3, 1953.

been especially concerned with a form for internal use and have limited my work to this field.

After several years of preliminary studies and with the technical help of a recognized authority in bio-chemistry, Dr. J. A. Killian, we developed a form of magnesium chlorophyllin which was non-toxic, stable, and readily absorbed from the alimentary tract.

The clinical potential of this processed magnesium chlorophyllin is a wide spectrum of uses, which take advantage of its ability to increase cellular metabolism, stimulate tissue regeneration, and deodorize foul-smelling substances.

Topically, sodium/copper chlorophyll's most valuable asset is this tissue cell stimulation and anabolic property. Dunham[2] in 1942 showed that in tissue cultures, fibroblasts grew more luxuriantly when chlorophyll was present. The fibroblast cells were thicker, longer and more numerous. Livingston and Smith[3] in 1943 showed similar beneficial effects of topically applied chlorophyll in the treatment of both clean and infected wounds. Their experience indicates that healing is increased by 25 per cent in as many as 75 per cent of such cases when compared to the effect of Scarlet Red, Penicillin, Sulfanilamide, or Hydrosulphol. Barnes[4] in 1951 confirmed Smith's findings by the use of an electropotentiometer in determining the healing index of chlorophyll (Chloresium) treated wounds.

The mode of topical action is not too clear. Weak bacteriostatic action in vitro is admitted, but in vivo this effect may well be augmented by the increased metabolic activity of the cells involved.

Clinical experiences too numerous to discuss by such authorities as Gruskin[5], Cady and Morgan,[6] Boehme[7], Gahan[8], and Carpenter[9] more than justify the use of these sodium/copper chlorophyll for the healing and deodorization of indolent ulcers, suppurating wounds and burns.

Internal Use: My interest in chlorophyll derivatives began in 1911, while searching for an adjunct in the treatment of hypochromic secondary anemia. Toxicity studies had early shown chlorophyll to be harmless. In 1922 Buergi[10] used chlorophyll salts in the treatment of various diseased states with no evidence of toxicity. Since then my own observations have confirmed this non-toxicity and Hyams and Helfert have used chlorophyll solutions intravenously without harmful effects on rabbits.

The original in vitro experiments were done in 1947 using for test odors 5 cc of:

1) 20 per cent Benzyl mercaptan (skunk odor)
2) 1 per cent Thioglycolic acid
3) .01 per cent Trimethylamine

Chart I

They were put in stoppered bottles and observed after standing at room temperature for thirty minutes. The results were published in 1950 and have been repeated with essentially the same findings and confirmed by others[11] since then.

Additional in vitro tests[12] were done in a similar manner on onion salt and garlic salt because these two odors are of social esthetic importance. The table[1] on page 403 shows these tests as reported by two pharmaceutical laboratory technicians who were accustomed to identifying chemicals by odor.

This experiment would indicate that 10 mg of Westcott-process magnesium chlorophyllin, when allowed to slowly dissolve and continue in contact with onion powder in the mouth, would permit complete deodorization in vivo. In dealing with solid raw onion as eaten by many, it is important that no vegetable particles remain in the mouth to decay and reproduce onion odor. These residual vegetable particles remaining in the mouth have been the cause of most failure in the clinical observations reported by some workers. In our clinical experience, it has been found that one hour after the original Olodex tablet was chewed up, onion odors returned because particles of food remained in the tooth crevices and other pockets. It is likewise important to recognize that regurgitated food from the stomach can cause breath odor to recur. Odors of expired air are only tainted by food retained in the mouth and not from food odors in the pulmonary air. Onion powder swallowed in capsules does not cause onion breath unless regurgitated into the mouth.

(Continued on page 403)

The Growth in Cosmetics

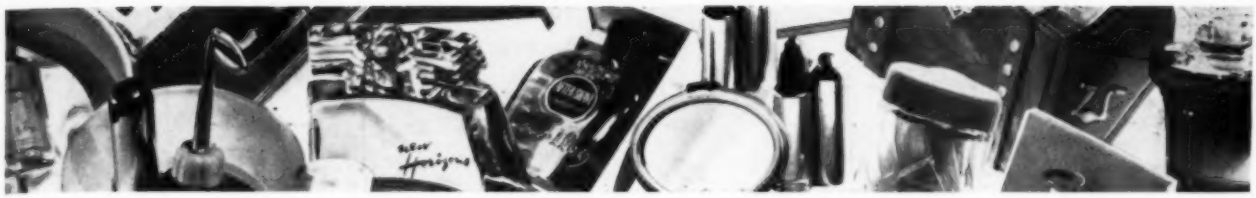
The trend in cosmetics is toward mass distribution of lower priced items. This does not mean cheap items, but widely used items which are sold in packages which are mainly functional, which items, for the most part, are distributed through practically all available outlets. The high priced, selectively distributed items and lines made up only a relatively small percentage of the $930,000,000 worth of cosmetic preparations sold last year. After all, while the very large majority of women of all ages in this country are beauty conscious and know that they must use many cosmetic items to keep up their appearance, the large majority of these women are also price conscious and cannot afford to use the higher priced lines for the purpose.

The cosmetic branch of this industry is made up of many more small and average sized companies than exist in the drug and pharmaceutical branch. The giants in the cosmetic field are not such great and outstanding giants as exist among drug and pharmaceutical manufacturers. The highest published sales total of any exclusively cosmetic manufacturer is in the neighborhood of thirty million dollars, while this figure is about a starting point for a large drug and pharmaceutical manufacturer who ranges on up to an annual sales volume of $150 million or more.

There are those who argue that the manufacture and sale of cosmetics in this country is a larger business than is the manufacture and sale of drugs and pharmaceuticals. This seems hard to believe when one considers the terrific strides made in the drug industry during comparatively recent years. Most likely it is not so at all, but the growth of the cosmetic industry has been both steady and phenomenal. From the dark days of the great depression of the early thirties, it grew steadily and quite sharply to a retail sales total of approximately $350 million in 1939. From that time on it grew consistently during each of the war years and during each of the years thereafter until it is now more than double the 1939 figure, and it is still growing so that before very long sales of cosmetics in this country will be treble the 1939 figure.

The manufacture and marketing of cosmetics is made up of quite definite classes. The high priced perfumes, toilet waters, colognes and make-up items are kept in their class by the actions of those marketing them. They are distributed only through retailers who have the type of personnel, the type of display, and the air of dignity or prestige which will cause consumers to have respect for the products which they offer. Some people are wont to describe the marketing of some of the higher priced products as the "snob appeal." But whatever this method is called, it is one which surrounds the products in the eyes of the consumer with outstanding properties that cannot be found in any of the products which sell at lower prices.

That this method of selling cosmetics is successful can be easily verified by considering the many perfume and cosmetic lines which have remained at the top of



the heap for many, many years. That carelessness in this type of marketing can lead swiftly to disaster can also be verified by recalling the outstanding perfume and cosmetic lines and houses whose products have fallen way down the scale until they are in sharp competition in all types of outlets with innumerable other similar products, or whose manufacturers are close to being, or are, out of business. This type of marketing is not easy to keep at top pitch, although the wear and tear on executives is probably somewhat less than it is on those responsible for promotion of the mass distributed cosmetics.

At first thought the selective type of distribution might be considered as the easiest and most economical procedure for a new entrant into the field to employ. This largely depends upon the type of products which are to be introduced, whether or not the better or prestige stores are willing to cooperate in introduction of the products, and whether or not the manufacturer fully understands what he is up against in attempting this type of distribution. This type of distribution presents many problems which are not easily solved, but which must be handled properly or the whole project will crash. Merchandising through selective distribution is not cheaper than merchandising by mass distribution, except as concerns the absolute amount of money spent. The percentage of the sales price which is to be applied to merchandising is about the same in both cases.

In the drug business many are of the opinion that the manufacturers who promote their products only through the medical, dental, and pharmacy professions operate with a much lower cost for merchandising and promotion. However, these people have no consideration of the huge expenditures made by these ethical companies for education and maintenance of their staffs of detail men (in truth salesmen who call on doctors to get them to prescribe certain drugs), on direct mail advertising to physicians and other professional men, medical journal advertising, and other promotional activities. Sampling to doctors of ethical products is quite an item in itself. When one really investigates various methods of distribution, he will generally come to the conclusion that they all represent just about the same percentage of the selling price. This is due to the fact that companies competing by using the same method of distribution will generally spend the full amount allowed in an attempt to keep up with, or get ahead of, competitors.

In any line of business, including cosmetics or drugs, it is possible for a company to hit upon an item which gets acceptance far beyond the dreams of the manufacturer or the industry, and, in such cases, the percentage spent for promotion might, for a short or long period of time, be far below the average for the industry. However, these cases are few and far between and cannot be considered normal. Neither are they of very long duration when they do occur.

The cosmetic business does not differ from any other business in that new products introduced by the top flight houses, or by new houses based on new products, are eventually made by other houses at lower prices. The case of face creams containing estrogenic hormones is a case in point. This product was developed as an entirely original product, and a new company was established to market it. By the time that the product was being quite generally accepted as desirable and safe for use, several of the well-established cosmetic houses operating on the restricted distribution plan, added this item to their lines. Then as objections to the product were raised in certain parts of the country, these houses joined forces

(*Continued on page 397*)

Air Conditioning at Lilly

by G. A. Kelley

CHIEF ENGINEER KATHABAR DIVISION
SURFACE COMBUSTION CORPORATION, TOLEDO, OHIO

Eli Lilly's Air Conditioning Program For Moisture-Sensitive Pharmaceuticals

Many varied production problems confront a manufacturer of pharmaceutical products. Obtaining and maintaining specific atmosphere conditions for the numerous process rooms involved is a critical one. Proper air conditioning and humidity control are two of the most important tools in the drug manufacturer's plant. Lacking these tools, one would be unable to meet the rigid quality specifications for drugs, biologicals, and antibiotics and to process these pharmaceuticals at low cost on a high production basis.

Pharmaceutical Air Conditioning Requirements

Air conditioning, just as with buildings, equipment, and layouts, has demanded exact engineering design to permit profitable operation in a highly competitive business. Important specifications which an air conditioning system must meet in a pharmaceutical plant include the following:

(1) Ability to maintain a process room at strict temperature and humidity levels;

(2) Versatility in range of air cooling and humidity conditioning equipment, such as would allow maintaining one process room at 40 per cent relative humidity and another room at 15 per cent R.H. at precise temperature levels;

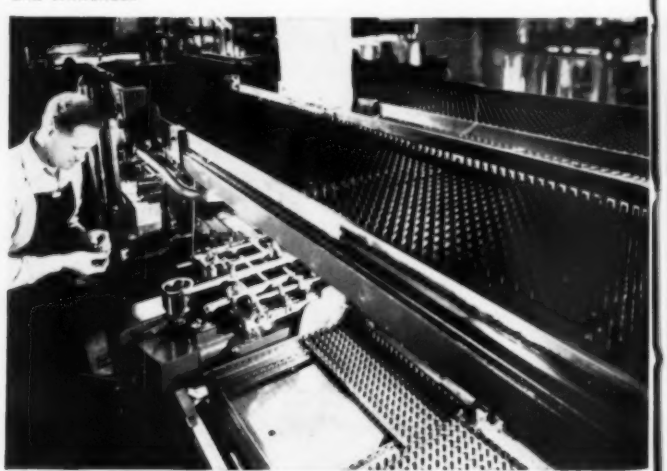
(3) Continuous 24-hour performance with no variation in air conditions—shutdowns to recondition equipment during drug processing could not be tolerated;

(4) Delivery of extremely pure and odorless air so as not to contaminate the drug.

Drug compounding warrants the use of the best in equipment, with proper attention to modern instru-

Fig. 1
Tablets are coated with multiple layers of powder and syrup, applied over several days, in revolving coating pans. Dry air is individually supplied to each pan to hasten the drying operation.

Fig. 2
Automatic production of thousands of gelatin capsules per machine per run. An optimum room atmosphere must be constantly maintained so capsules will dry and set quickly without hardness and brittleness.



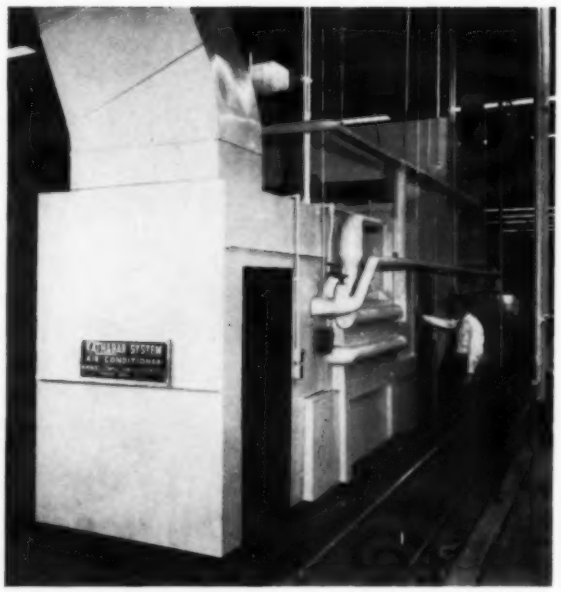


Fig. 3
Plant engineer takes leaving air dry bulb temperature for the 12,500 cfm capacity Kathabar dehumidifier which conditions air for the gelatin capsule manufacturing room.

mentation, materials of construction, and specialized equipment. This includes air conditioning systems. That equipment which cannot hold exacting temperature and humidity levels, as mentioned in (1) preceding, cannot be utilized due to the moisture equilibrium properties of many hygroscopic pharmaceuticals. Variations in humidity will result in a product unable to meet the quality specifications, make for difficult and inconsistent processing, and result in work stoppages due to clogged machinery.

Multiple Unit Type Air Conditioning System

Not all drugs are as moisture-sensitive as are others. Therefore, one relative humidity level throughout the entire plant is not practical. Control of these varied conditions is attained through use of multiple air conditioning units, each of which treats the air to a different resultant temperature and humidity. This answers point (2). These atmospheres are piped separately direct to the particular process room for which each is required.

To enlarge upon point (3), although all pharmaceuticals are not being processed 24 hours each day, it is practical, in order to meet exacting standards, to maintain the rooms at their required conditions around-the-clock. As with any processing tool, equipment shutdowns for maintenance reflect in higher production costs, particularly if a shutdown occurs during the working hours.

Refrigeration Cooling Limitations

In most instances, it is impractical to attempt to obtain relative humidities below 20 per cent (or even 40F dewpoint) with refrigeration equipment alone. To maintain room atmosphere at a comfort temperature level (80F) and an extremely low relative humidity (15 per cent) would entail operation of a refrigeration system at sub-freezing conditions. Very frequently, it would be necessary to shutdown the equipment to defrost the cooling coils.

On many occasions when it is possible to use refrigeration cooling alone, a large amount of air reheating is necessary to obtain the desired temperature level. Refrigeration systems dehumidify through a cooling action. Usually, where low humidities are required, air is first cooled to dehumidify, then reheated to the proper delivery temperature, both actions occurring in almost identical temperature ranges. Obviously, this is a waste of power and extremely expensive.

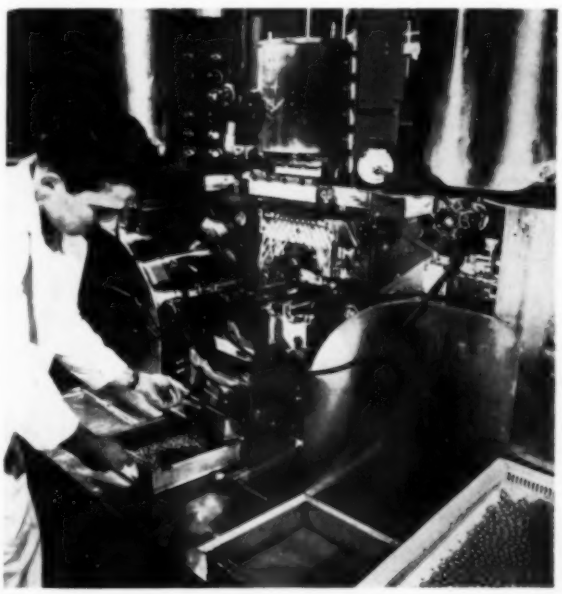
Freedom from product contamination is an essential condition for pharmaceutical manufacturing practice. Conditioned air must not carry into the room foreign matter of any type. Extremely pure and odorless ventilation is required, as mentioned in point (4). This is a difficult but necessary standard to meet.

Dehumidifying System in Operation at Eli Lilly

Eli Lilly and Company believe that the air conditioning system in operation to supply properly conditioned air for hygroscopic pharmaceutical processing in their

(*Continued on page 400*)

Fig. 4
The Lilly "gelseal," an elastic gelatin covering enclosing a liquid pharmaceutical, is produced in large quantities. Dry room air is necessary to set capsules quickly and overcome moisture effect of enclosed liquid.



Preference for YOUR Product

CAN COME FROM AN IMPROVEMENT LIKE THIS

We have adapted the easy-opening wrap to many different types of products. We'll be glad to show you how it can benefit yours.

●

Put your packaging-improvement plans up to PACKAGE

A package that offers greater convenience to the user has strong sales appeal. Pond's Tissues and the Sitrue Pocket Pack, made by our machines, are a good example. A pull on the easily-grasped tab slits the top of the package, making a clean-cut opening through which the tissues can be drawn. The cellophane wrap remains intact, serving as protection for the remaining tissues . . . A product packaged in this thoughtful manner can count on steady repeat sales.

The easy-opening wrap is but one of many packaging innovations which have resulted from studies made by our Engineering and Designing Department. And the machines we build cover not only the wrapping of individual items, but bundling machines, bag-making-and-filling equipment, carton forming machines, etc. In short, PACKAGE offers you not only the know-how that leads to new and better forms of packaging, but machines that insure LOWEST COST.

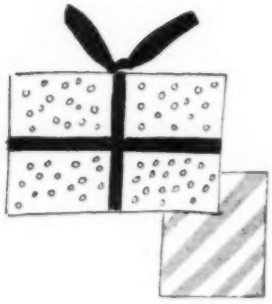
PACKAGE MACHINERY COMPANY • *Wrapping Division*
Springfield, Massachusetts

NEW YORK CHICAGO BOSTON CLEVELAND ATLANTA DALLAS
DENVER LOS ANGELES SAN FRANCISCO SEATTLE TORONTO MEXICO, D.F.

See us at the Packaging Show—Booth 103, Navy Pier, Chicago, April 20-23

PACKAGE MACHINERY COMPANY

Over a Half Billion Packages per day are wrapped on our Machines



Packaging and Selling

Post Office Says No

The Post Office Department has finally decided that there is a limit to the advertising claims which can be made for a perfume, and the head of a perfume company declares that in effect nobody believes perfume advertising and if put to the test he hopes to prove it.
In December the Post Office issued a postal fraud order against the Trulove Company which was advertising in magazines and newspapers Chez-Elle, Fury, Diablo's Secret of Double Power and Lute's Perfume of Power. The postal hearing examiner alleged the following statements to be false and fraudulent:
1. That using Chez-Elle perfume will enable any married woman to make her husband obey her every command and make him "come home at night and help her."
2. That using Fury will enable any woman to make men leap "to obey" her command and none will refuse since it has "great power over men."
3. That women using Diablo's Secret of Double Power will be enabled to possess the "Double Power" to take "a husband away from his wife or a sweetheart away from the arms of his loved one."
4. That Lute's Perfume of Power also enabled women to make man obey, to be "obedient slaves," enabled users to make men leave their wives and sweethearts and do whatever the user wanted them to do.
Rejected also by the postal examiner was evidence attempting to show "that the perfume industry regularly resorts to fanciful claims" and also that the copy statements in the advertising are not accepted literally by the public, but are highly imaginative, fanciful and poetically conceived.

Which is it?

It is a little bit confusing nowadays to read what marketing experts believe is taking place in the retail store.
There has been an awful lot of conversation and writing during the last few years stating the modern American woman is a very busy person, that over 20 million of them are employed, and that they don't like to shop any more, but have pre-determined ideas so that what they want most from a retail store is to get in and get out with what they want as fast as possible. Hence, all the fulsome praise for the grocery self-service supermarket and its golden future everywhere.
Now along comes a president of a leading management consultant firm with some very funny statements resulting from a survey it made on distribution. This man states that American women now spend twice as long to do their shopping as they did in 1940. This is because, according to this expert, the American woman has been educated by advertising to be conscious of the availability of many more items, she has better taste, is more concerned with style and wants articles that will fit into a home, which on the average, has about 25 per cent less space than the home of 1940.
We believe this expert is on very sound ground when he states that there is a distinct trend in this country to reduce the floor area of the average American home. Whether the rest of his statements are just conversation and words, we can't venture a guess because there are so many good surveys and sound arguments on both sides of this question.

How Many Words

Dr. Ernest Dichter has just prepared a booklet, "What Packaging Really Means," for the Paraffined Carton Research Council (Chicago).
According to Dr. Dichter, the modern housewife is faced with what he calls a "misery of choice" when it comes to selecting packaged products. They have to choose from hundreds of products and brands and, more often than not, they get relief through emotional channels. We would like to suggest to the trade that it is even worse than that. According to the Trade-Mark Review, the directory of cosmetic trade-marks which we publish, there are over 60,000 cosmetic trade-marks still in commercial existence. Our guess would be that there are over 500,000 registered trade-marks for package consumer goods. We would further guess that there are over several thousand trade-marks actively fighting and competing for the consumer's attention and for some faint vestige of recognition value.
Some years ago, we read a statement that William Shakespeare had the largest vocabulary of any human being. That means that he knew more words, which he was able to use, and recognize their meaning, than

anybody else. We forget the number of words attributed to him, but we think it was something around 12,000. Basic English, which enables anyone to converse with fluency on everyday subjects, contains something like 900 words and the average American vocabulary probably doesn't much exceed 3,000 words.

According to psychologists vocabulary is supposed to be one of the best ways to indicate intelligence. If we measure the average American consumer's intelligence on the basis of less than 5,000 words, then advertising is assuming a colossal task in trying to add to that vocabulary another 7,000 or what amounts to 150 per cent of their personal maximum capacity to absorb words.

Putting it another way, what we are doing in America through packaging, branding and advertising is literally demanding that the American public not only learn another language, but that they acquire a larger vocabulary in this other language than they already have in their native tongue.

Packaging Award

The panel of judges in the variety store packaging competition sponsored by Variety Store Merchandising, a business publication of the variety market, made the following awards:

Cosmetics & Toilet Goods Division.

GOLD AWARD won by the Lashbrite Mascara package of The Theon Company, New York City.

SILVER AWARDS went to Helene Curtis Industries, Inc., Chicago, for its Helene Curtis Shampoo Plus Egg package; to Merlee, Inc., Minneapolis, Minn., for its Shoo! Insect Repellent Stick; and to the Lander Company, New York City, for its Darcel Flower Toilet Water Set.

Expanding Vending

One of the industries which is certainly sure that it has a golden future is the maker and operator of vending machines. There are a lot of people in this industry who could win a prize anywhere in a competition for lurid imaginations. Aside from the more prosaic prophecies, which are quite common to this trade, that the business will double, triple, quadruple or more within the next couple of years, are some pretty vivid ideas about the way the vending machine will be applied. All these men say the chief function of the vending machine is a 24 hour selling device on pre-sold packaged merchandise. One of them believes that the typical drug store will become a sort of revolving store which during the day would have the usual window display and after closing time would change into a battery of coin-operated vending machines for packaged staple items.

Said one of these executives, "vending machines will not replace the human being, because they can sell only pre-sold items that people already want." "On the other hand, they don't go out to lunch, nor do they keep the customer waiting or ask for a raise."

One thing that can be said for the vending machine people, as compared to the supermarket operators, is that they precisely define the place and function of their machine, that is, that it can only sell pre-sold items that people already want. Since actually that is what the supermarket and the self-service market is rapidly coming down to, it looks very much as if the qualifications of self-service and personal selling will soon be generally admitted by the retail trade on the same terms that the vending machine people have already so intelligently accepted.

Managment Firsts

Seven drug and cosmetic companies have been awarded Certificates of Management Excellence for the year 1952 by the American Institute of Management, New York, a non-profit organization devoted to improvement of corporate policies and practices. For 1952 over 3,000 leading concerns were studied by the Institute and out of 330 selected were the following seven drug and cosmetic companies:

Bristol-Myers Company—New York
Chesebrough Manufacturing Co.—New York
E. R. Squibb & Sons—New York
Sterling Drug, Inc.—New York
Colgate-Palmolive-Peet Co.—Jersey City
Johnson & Johnson—New Brunswick, N. J.
The Procter & Gamble Co.—Cincinnati

In order to qualify, a company must be given 7,500 points out of a possible 10,000 in the following areas of management, economic function, corporate structure, health of earnings growth, fairness to stockholders, research and development, directorate analysis, fiscal policies, production efficiency, sales vigor and executive evaluation.

Decision Is in the Store

As selling becomes much more competitive, we have a very strong hunch that the fight between point-of-sale and space-of-time media for the advertising dollar is going to rage with increasing ferocity. Every time a survey is made in a retail store on the importance of shelf position in display, or anything of that sort, it is shown conclusively and decisively that even a 50-million-dollar appropriation in advertising space could easily go down the drain unless the proper and favorable point-of-sale position parallels this advertising.

At the same time, almost every marketing man knows that to some imponderable degree the best sort of a shelf position or display loses its punch unless there is at least some sort of a subconscious recognition of familiarity and confidence in the product and brand name by consumers that can best be established through advertising.

As an indication of some of the marketing facts which will be used in determining the division of advertising funds, a recent store survey of more than 5,000 customers at the biscuit and cracker department by the duPont Company, makes a rather startling discovery. The statement is made in this survey that most buying decisions are made at the point of sale. The survey showed that 89.1 per cent of biscuit or cookies and 73.6 per cent of crackers, bought in self-service markets are store decisions.

DRESSING UP makes the difference!

Here is an expensive-looking but low-cost sales-package. Our 6-ounce bottle #A-4338 and Empress molded closure combine quality and economy. Other sizes available are ½-, ¾-, 1-, 2-, 3-, 4-, 8- and 12-ounce.

Beauty... style... glamourous ACL labels are outstanding assets that help your package do an excellent selling job.

May we submit our ideas for a Duraglas sales-package for your products?

Duraglas packages are protectors of quality

TRADE MARK REG. U.S. PAT. OFF.

OWENS-ILLINOIS GLASS COMPANY • TOLEDO 1, OHIO • BRANCHES IN PRINCIPAL CITIES

GAIR

CARTONS CREATE

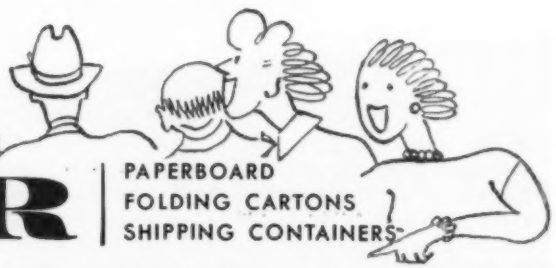
IMPULSE BUYING

IN SELF-SERVICE MARKETS

Increase sales, profit and good will, with dynamic Gair Cartons. More and more, Impulse Buying of a product in Self-Service markets depends on the attractiveness and selling impact of the package.

Safeguard the success of your new package by placing your packaging problem with the Gair organization. Yes! Gair has been designing and manufacturing folding cartons with a powerful "Sales Impact" for almost a century. For complete information

Write for Brochure on Gair Cartons.



GAIR

PAPERBOARD
FOLDING CARTONS
SHIPPING CONTAINERS

ROBERT GAIR COMPANY, INC. • 155 EAST 44TH STREET • NEW YORK • TORONTO

Not So Frightened

One of the things that catches our interest in a big way, is the number of retail executives who are now standing up and declaring that they are not a bit afraid of the big bad wolf. It was not so long ago that there was such a typically American overwhelming wave of enthusiasm for self-service supermarkets, one-stop shopping and what have you, that no intelligent executive would dream of facing this tidal wave of public opinion in a negative speech or article.

There must be some significance in the way they are jumping up now and putting themselves on record. For instance, a leading chai-nstore executive recently stated that before even this year is out, we will be hearing much less about selling simply by the courtesy of the customer and about mechanizing the whole selling operation. This executive stated that his organization's carefully controlled experiments have convinced them that on many different kinds of commodities self-selection lowers volume, reduces average gross sales and increases what is known euphemistically in the trade as "stock shrinkage."

Nobody as yet, so far as we have seen, have taken up our pet phrase for self-service "take it or leave it."

It Can Happen Here

A big Lenten promotion is being planned by a number of associated companies. This campaign will push a recipe for ripe olive tuna ring.

The United States Steel Company is running a full page, full-color ad in the March issue of Women's Home Companion on behalf of the products included in the tuna ring.

Is This the Way to Sell?

A great many members of this industry are extensive users of cooperative newspaper advertising and probably of all the multitude of headaches which arise in the use of this kind of advertising, our industry will come pretty close to standing as the number-one sufferer.

In spite of all the studies made by the Association of National Advertisers and many others exploring the evils as well as the benefits of cooperative advertising, and in spite of the ominous cloud of the Robinson-Patman act which continually hangs over the advertiser who uses this form of advertising, our industry still invests many millions of dollars in this way.

It looks now as if a system of organized pressure is going to be directed towards advertisers to increase the amount of money which they are spending in local newspapers. As one advertising writer, discussing the recent annual meeting of the Newspaper Advertising Executives Association, says, there was present a "grim determination" that "something had to be done."

One of the speakers stated that the way to turn the tide of advertising towards newspapers is at the local level. He pointed out "that far too many potential newspaper schedules are being lost because of the emotional infatuation of district sales staffs and local dealers for TV, radio and magazines. Another speaker agreed that local newspapers are going to pay much more attention to the district managers and field sales forces.

Still another speaker was very sure that the local retailer was the key to increase advertising from manufacturers. Said this speaker "How simple it all becomes if by chance 300 or 400 newspapers should start a backfire from the retail trade wanting newspaper advertising.

It looks as if some national advertisers are going to feel some very strong breezes blowing in from some parts of their local market.

Tastes Good, Too!

One of the big trends right now in advertising and promotions is the waistline appeal. During the last few weeks, advertising magazines have announced that next year's advertising for all sorts of different things including Pepsi-Cola etc. will "stress the calories." Even in the medical magazines there seems to be a somewhat over-weighted abundance of products which promise a reduced waistline.

One of the newcomers that interested us very much is the French National Association of Cognac Producers. The French have been counting the calories, and the way they figure it, an average serving of cognac contains about 75 calories.

According to the latest Cook Book which specializes in special diets this is the way other products compare:

Manhattan—per cocktail glass	167 calories
Old Fashion—per cocktail glass	183 "
Dacquiri—per cocktail glass	124 "
Martini—per cocktail glass	147 "
Jigger of rye	122 "
Jigger of scotch	107 "

How many of us read this and weep?

Fragrance Can Sell

For over twenty years there has been a consistent effort to make use of fragrance in selling merchandise. This insistence has not been organized and it has given every appearance of off-again-on-again enthusiasm. Compared to the developing use of color and package design, fragrance in selling has made a very poor showing during these last twenty years. At this present date, the amount of money invested for fragrance products, to be used as a supplementary aid in selling, is probably trivial.

Nevertheless, this insistence that fragrance must have a part in selling persists, and here and there people are still diligently working on certain technical problems that will bring nearer a wide-spread use of fragrance as a selling medium.

One of the technical problems that has had some attention has been the impregnating of paper in such a way that the original odor will persist on this paper over a considerable period of time, retaining its real perfume qualities. That there is a substantial demand for such a process is shown everytime somebody comes along with apparent success in really licking this technical problem.

One of the newcomers to this promising field of scented paper is the Fragrance Process Company of New York City.

She's almost persuaded . . .

Beautiful Lustrseal closures are colorful, attractive and convenient to use.

Then the package helps make the sale

To make your package work for you at the point of sale, it must be a sales package from top to bottom. The right closure is the finishing touch.

Packages with O-I molded closures are a standout on any retail shelf or counter with their brilliant or pastel colors. And they are a delight to use—won't stick or corrode . . . give a more positive seal and reseal.

Plan now to give your product the sales plus of a sales-minded closure.

CLOSURE DIVISION—OWENS-ILLINOIS GLASS COMPANY

TOLEDO 1, OHIO • BRANCHES IN PRINCIPAL CITIES

Lots More, if You Want It

American families used around $50 billion of consumer credit in 1952 in buying some $215 billion worth of goods and services, Mr. Dietz says. They still owe around $23 billion.

Splitting the Pool

It looks very much as if the soap people are going to follow the cosmetic people in an effort to create business simply by multiplying the duplicating number of products.

Two new soaps that are immediately on the way, is the new Swan floating soap in which the 5c price will be prominently stamped on the label and Colgate's new Chlorophyll soap to tie in with the new Disney moving picture, "Peter Pan."

Automatic Milk Dispensers

Mechanization in retailing took quite a big jump forward recently when a New York milk company installed automatic milk dispensers in 70 different apartment houses and housing projects. Over 1,500 installations are scheduled in the next two years based upon the pronounced success of this method of delivering milk. Much more interesting than merely a new development of the vending machine industry such as this is, is the fact that a basic commodity is now being brought to the consumer and made continually accessible without the need of any personal service.

In some parts of the country, the grocery supermarkets have been going into the retailing of milk in such a big way that a few large chains in the far West have purchased leading dairy companies. Now that the vending machine has discovered the big apartment houses and. the closely segregated suburban housing development, maybe we are entering an era where the supermarket will begin to look like the one horse shay, at least for those widely advertised low priced impulse products for which self-service seemed the final answer.

New Cosmetic Line

The Rexall Drug Company which put on the market the Ann Delafield reducing plan last year, is now ready to bring out a line of Ann Delafield cosmetics. This new cosmetic line which will include eight items, will be priced as reported, from $1.25 to $5.00. Apparently, this is an effort for Rexall, which has its Cara Nome cosmetic line in drug stores, to break into the higher priced so-called prestige range of distribution which necessitates lining up a strong background of department store cooperation.

Dim Views on Advertising

Here's what the experts think about advertising. The following was taken from the Tide Panel and here is how they evaluate cigarette advertising:

"Credibility is but one and not the most important factor in advertising."

"We who work in the drug and toiletry industry know well how the "big lie" sells merchandise. It is a discouraging spectacle for the honest advertiser, believe me."

Here is how two advertising agency men put it:

"Credibility is a tiny factor—necessary but minor in any advertising success. The past 50 years of advertising development as a science have discredited credibility in favor of effective presentation."

"A degree of credibility cannot overcome, for example, a greater degree of inefficient media use."

Said one panel member, neither an advertiser nor an agencyman, "This question sounds if the advertising profession is concerned with credibility rather than truth. If that is true, advertising has a dim future."

Stick Dentifrice

The stick form made a very solid and substantial place for itself in the cosmetic business. During the period that the cologne stick was zooming into place, many people in the industry got the idea that the customer convenience of the stick would make it adaptable to many other kinds of cosmetics. There has been some success for deodorants and sun screens, but up to date, as far as we know, the several efforts to establish a cream in stick form, either for the hands or face, have not made any real headway.

Now the Tar-Gon Products Company of Chicago are getting ready for national distribution on a stick dentifrice which has been selling in spotty distribution for several months. This dentifrice in stick form resembles a pencil and it is said that when this pencil is rubbed over stained teeth, it will make them whiter.

Say it with Music

The Norgine Laboratories of New York are saying it with music to the medical profession. Several thousand records have already been mailed to doctors with the story of Norgine products one side and musical selections on the other.

This idea of saying it with music on records to Doctors is not a new one for drug companies, but Norgine's approach certainly has some original qualities. For instance, one of the musical scores selected was a little known composition by Marin Amrais known by the intriguing name of "A Tableaux of a Bladder Operation." To really cheer the doctor up and take him away from the cares of the office, Norgine included on the record a complete detailed history of all of Schubert's ailments and illnesses.

Big in T. V.

Out of the top 25 TV advertisers are included the following:

Procter & Gamble
Lever Bros.
Colgate-Palmolive-Peet
Toni Co.
Miles Laboratories
Bristol-Myers

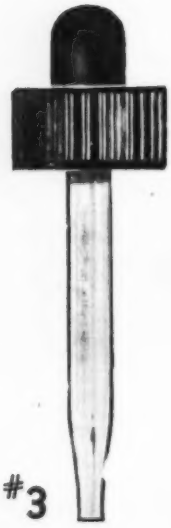
#1

New Perfection DROPPING PARTS

For Attractive Appearance . . .
. . . Perfect Performance

The New Perfection line of dropping parts is designed to meet your exacting demand for modern-looking units that function perfectly. We know that the user's satisfaction with your product may depend upon the reliability of the dropper—And, New Perfection dropping parts present your preparation at its very best.

The New Perfection reputation for excellence is maintained by use of the best quality materials, scrupulous attention to cleanliness and rigid inspection of all parts before delivery.



#3

DROPPER GLASSES

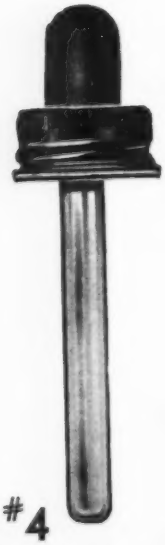
are available in a wide variety of styles and sizes; plain or CALIBRATED in any color to mark specific dosages.

BULBS

are supplied in many styles and colors. Oil Resisting AMEKINE synthetic rubber is used for oil preparations; natural rubber is supplied for other products.

CAPS

of plastic or metal, can be furnished in a complete range of sizes and colors.



#4

BOTTLES

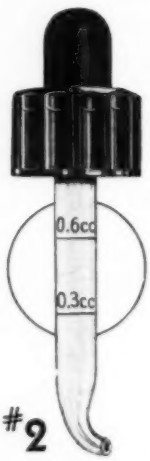
in an attractive modernistic style in Amber, Blue, Green or Clear glass, are available, complete with dropping parts, in the following sizes: 2 cc., ⅛, ¼, ½, 1 and 2 oz.

DROPPER GLASSES CAN BE

CALIBRATED

IN COLOR

An inexpensive extra that adds great convenience to the use of your preparation. The dosage you desire in the color you specify is accurately and permanently printed on the dropper glass. Trade-marks and firm names can also be imprinted.



#2

We Can Supply Dropping Parts To Fit Your Bottles or Furnish Complete With Our Own Bottles

Write for Samples and Quotations

PENNSYLVANIA GLASS PRODUCTS CO. INC.

"Glass Goods of the Better Kind"

430 N. Craig Street • Pittsburgh 13, Pa., U. S. A.

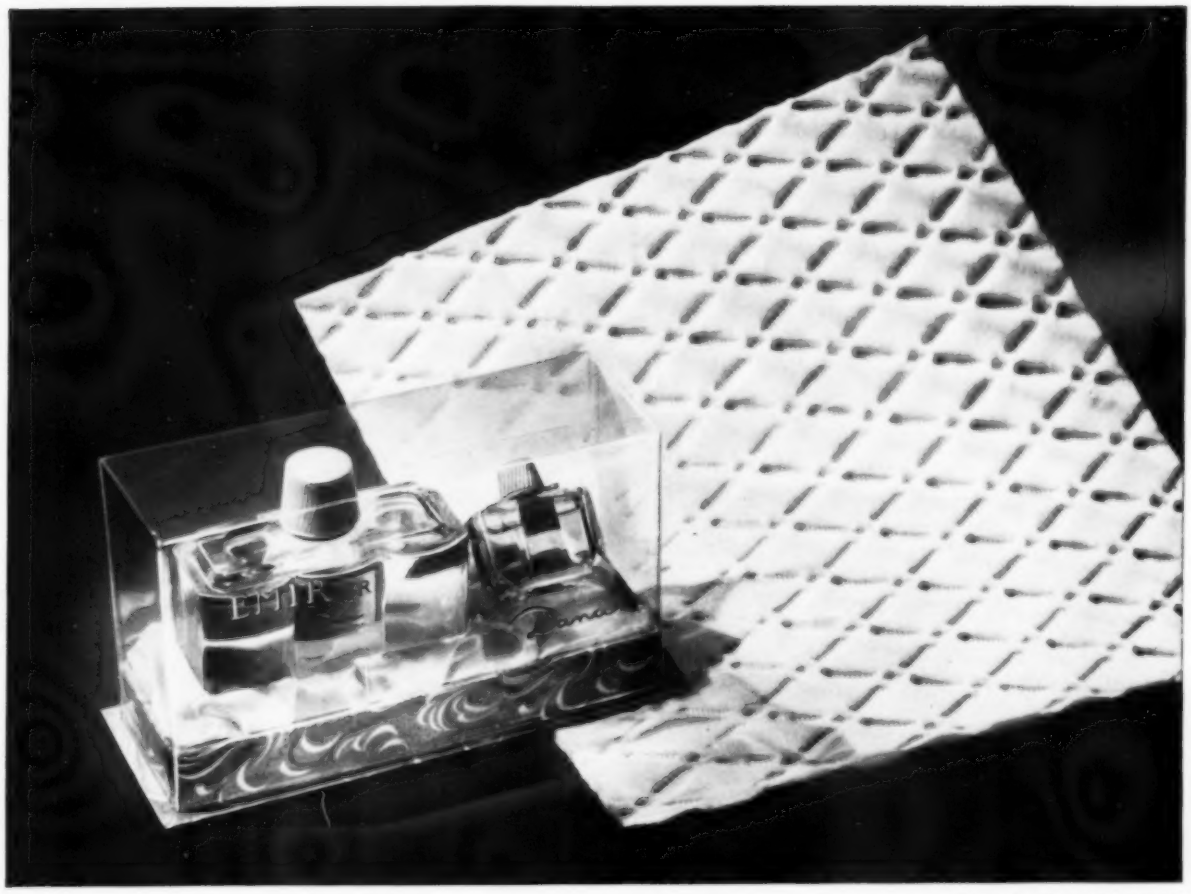


Photo courtesy Dana Perfumes, Inc.

Custom Protection for cosmetics—the touch of elegance that adds glamorous new sales appeal

How quickly the eye is attracted to a trim, clean, smart-looking cosmetic package! How important, too, that you select a protective packaging material like Kimberly-Clark KIMPAK.* For KIMPAK carries out the grace and beauty of your package on the *inside* . . . while providing real shipping protection to the most delicate glass container and the most sensitive finished surface.

KIMPAK is wonderfully soft, sparkling clean—easy to apply. In rolls, sheets or pads, it can be "tailored" to fit every cosmetic packaging need. And of course, as KIMPAK adds that distinctive touch of elegance to your package, it also guards against shock, vibration and surface damage.

Regardless of whether your product is toilet soap, lotion, perfume, face powder or lipstick, try *custom protection* with KIMPAK. It's the smart, modern way to give your product bright new sales appeal. For information, write to Dept. J-33, Kimberly-Clark Corporation, Neenah, Wisconsin.

KIMPAK INTERIOR PACKAGING

A Product of **Kimberly-Clark**

*T. M. REG. U. S. & FOREIGN COUNTRIES

Schoettle Case Histories:

true story of a

Purchasing Agent in a Tough Spot

CASE HISTORY #77 Schoettle makes 35 different boxes for this customer*, Mr. Big in electronic industry. Company decided it unnecessary to box a certain part and allowed inventory to deplete . . . Decision was suddenly reversed . . . Purchasing Agent found himself in a tough spot. Needed boxes . . . three colors and varnish . . . in ten days—and no cutting corners on quality! Schoettle delivered on time, of course!

CASE HISTORY #22 Customer* needed a box to contain and properly display a teapot and a container of tea bags . . . Shape of a teapot and much smaller box of tea bags presented first magnitude problems. Purchasing Agent was in a tough spot. Had to have what was wanted . . . Schoettle engineers designed smart package that protected the teapot and gave excellent display at same time. Company and PA were vociferous in praise.

Schoettle customers never worry about box problems or box needs because they know that as long as they're Schoettle customers they have nothing to worry about! And Purchasing Agents, too, *have* discovered that it's swell to have Schoettle on their side especially when they find themselves in a tough spot . . . Schoettle takes care of its customers. May we show you?

*name on request

EDWIN J. SCHOETTLE CO.

533 NORTH ELEVENTH STREET • PHILADELPHIA 23, PENNA.

Designers and Manufacturers of Paper Boxes with Buy Appeal

Doin's

Searle has developed Pro-Banthine for use in peptic ulcer, gastritis and certain other gastro-intestinal disorders. Its effects are from two to five times greater than those of Banthine and the side effects are greatly reduced, or absent.

Pfizer now has Viocin (Viomycin Sulphate), an antibiotic to be used as an adjunct in streptomycin-resistant and isoniazid-resistant tuberculosis.

Wyeth has introduced Bicillin Sulfas in suspension and tablet form, combining in one preparation the new penicillin compound, Bicillin, with Sulfose. It is indicated for all infections caused by organisms sensitive to the action of penicillin or the sulfonamides.

Abbott has brought out Fumidil, a potent, new direct-acting antibiotic specific for intestinal amebiasis. Unlike the broad-spectrum antibiotics, Fumidil is directly amebacidal, has no bacterial spectrum and does not affect the normal bacterial flora of the intestinal tract.

Winthrop-Stearns has two new products: Mebaroin, a combination of Mebaral and diphenylhydantoin, which controls all forms of epilepsy, grand mal, petit mal, and other conditions; and Allevaire, an aqueous solution of a new detergent, Triton WR-1339, in combination with sodium bicarbonate and glycerine. It is administered by means of any standard aerosol or nebulizer technic.

Upjohn has announced a new dosage form of Cortisone Acetate, a sterile aqueous suspension for intramuscular administration.

Lederle has announced the preparation of two new products: Leucovorin, a pure synthetic compound that will be used to counteract toxicity of the folic acid antagonists; and Hibicon Benzchlorpropamid, a new, well-tolerated anti-epileptic drug which has been found effective in the treatment of patients who are resistant to treatment with other available anticonvulsants.

Coty has come up with Instant Cleanser, a creamy, homogenized snow-white liquid that "floats-off" cosmetics and the day-long accumulation of soot and grime in no time at all, leaving even the most sensitive skin soft, smooth and immaculately clean. It is packaged in a white plastic squeeze bottle.

Charles Antell recently began to distribute a new Liquid Creme Shampoo with Lanolin containing Hexachlorophene.

Parke, Davis is now producing Bacitracin Parenteral, an antibiotic effective against a broad range of gram-positive organisms and penicillin-resistant strains.

Also announced by the company is a special preparation of Dilantin, called Infatabs Dilantin, for use in infant sufferers of epilepsy.

Wrisley has added three new products to its line of bath preparations: Superbe Beauty Bath Crystals in new concentrated form with Aquasol added; Superbe Bath Powder, a new deodorant, with a large puff for after-bath application; and Superbe Pine Bath Oil in concentrated form, now in a new stream-lined bottle.

Aquasol is a new ingredient which eliminates all harshness from the water.

Upjohn has released two new products: Depocillin, Sterile Suspension, Veterinary, an injectable procaine penicillin G preparation for veterinary use; and Biosulfa (Veterinary), Tablets, containing crystalline penicillin G, potassium and sulfadiazine, sulfamerazine, sulfathiazole and calcium carbonate. The tablets are indicated in the treatment of secondary infections during the course of either canine or feline distemper, for respiratory infections of bacterial origin, urinary tract infections, and other conditions.

Ames Co., Inc. has developed Ictotest Reagent Tablets, for detection of urine bilirubin. This identification is not affected by other normal urine constituents. The tablets, in bottles of 90 with test mats, are supplied through regular drug channels.

Shulton is making available for a limited time only the special offer of Friendship's Garden Liquid Petals (regularly $1.25) and Friendship's Garden Toilet Water (regularly $1.25) both for the special price of $1.50. This is being done because of the pro-

Continental's artists translate ideas into packages that sell

MAY WE TAILOR A PACKAGE FOR YOU?

To Continental people, your proprietary product is more than a powder or pellet looking for a wrapper. It's a personality—and we do our best to hand-tailor a container for its needs.

That is why our artists are eager to see your design properly adapted to look well on a round, oval, tall or flat package...and take such pains in helping you select colors that are both pleasing and appealing. That is why our lithographers fuss so over plate-making details...and why pressmen as well as inspectors make sure that your package is lithographed and produced to our high standards.

No two manufacturers have exactly the same problems. From long experience we have built up a list of package services that our customers have found helpful. We'd like a chance to hand-tailor these services to *your* particular requirements.

CONTINENTAL CAN COMPANY

Continental Can Building,
100 E. 42nd Street, New York 17, N. Y.

EASTERN DIVISION
100 E. 42nd St., New York 17

CENTRAL DIVISION
135 So. La Salle St., Chicago 3

PACIFIC DIVISION
Russ Building, San Francisco 4

Doin's ... (CONTINUED)

gram's success last spring as well as dealers' requests for a repeat performance.

Pfizer is marketing Permapen, a prolonged-action penicillin compound, in two dosage forms, an oral suspension and an aqueous suspension for injection by the Steraject disposable cartridge syringe. The oral suspension is sold, ready to take, as two ounces of peach-flavored fluid containing 60,000 units of Permapen, Pfizer's brand of dibenzylethylene-diamine dipenicillin G, per cc.

Merck has announced the availability of Saline Suspension of Cortone Acetate Veterinary for use in ketosis in dairy cows as well as in rheumatoid arthritis and certain eye and skin diseases in dogs, cats, cattle, and horses.

Merck is also distributing Dental Ointment of Hydrocortone Acetate for the treatment of certain types of acute or chronic inflammation of the gums.

In addition to the 2 cc. ampuls previously marketed, Merck has announced the availability of 1 cc. ampuls of Nalline.

Sharp & Dohme has introduced Remanden Tablets, a new dosage form for oral penicillin therapy, combining Benemid Probenecid and penicillin. Such a combination offers the additional advantages of a convenient dosage schedule and the elimination in many instances of the need for repeated intramuscular administration of penicillin.

Armour Laboratories are distributing Bipar, tablets containing 6 micrograms of Vitamin B_{12} and 30 milligrams of Intrinsic Factor per tablet, supplied in bottles of 30 tablets each. This product is the oral equivalent of parenterally administered vitamin B_{12} in the dosage range indicated.

Organon is distributing Intrinsic Factor Concentrate in Bifacton, a new preparation for pernicious anemia patients, and possibly others, especially in the older age group who lack intrinsic factor necessary for the alimentary absorption of Vitamin B_{12}. Bifacton tablets are available in boxes of 30 tablets.

Lilly has added the following items to its product list: Suspension M-120, Sulfa-Neolin (Benzethacil with Sulfonamides, Lilly); Ointment No. 75, Neomycin Sulfate; and Ophthalmic Ointment No. 54, Neomycin Sulfate.

Wyeth has introduced Phenergan Expectorant Troches with Codeine, for coughs associated with the common cold, minor infections of the upper respiratory tract and minor throat irritations.

Quinn Drug & Chemical Co. has introduced Quinn's Rubbing Alcohol Compound for sickroom use. It is packaged in a round-tapered pinch bottle with bulb shoulders, making it easy to handle. The pint Duraglas bottles are manufactured by Owens-Illinois Glass Co.

Marvin R. Thompson has changed the name of their Marvite Capsules to Vitamart-MRT in order to prevent confusion with other products.

Helene Curtis have completely repackaged their Creme Shampoo, along with a brand new formula, which, the manufacturer states, contains twice as much lanolin as any other leading shampoo.

Squibb has prepared a new, effective, yet safer, streptomycin preparation, Distrycin, combining equal parts of streptomycin sulfate and dihydrostreptomycin sulfate.

Lady Esther, Ltd. will launch a large advertising and promotion campaign for a hormone cream during the first week in April when it introduces its new popular-priced Estrogenic Hormone Cream. A 1-ounce jar will sell for 59 cents, and a 2-ounce jar, for $1. The company guarantees that the Cream contains 100,000 International Units of natural estrogenic hormones (the same number of units used by higher priced creams).

Pfizer has announced a new intramuscular veterinary form of terramycin for the treatment of certain infections in cattle, horses, sheep and swine, as well as in small animals. Three dosage forms will be made available to veterinarians: a 100-mg. single-dose vial, a 1-gram and a five-gram multiple dose vial. This new dosage form is Crystalline Terramycin Hydrochloride Intramuscular-Veterinary.

6th Annual Du Pont Study Shows

3 OUT OF 4 DEALERS NOW

Substantial Gain Over Previous Year's Report

For the sixth consecutive year (according to the latest Du Pont survey of the market), there has been a substantial increase in the number of retail dealers stocking pressure-packed aerosol products. Today . . . 3 out of every 4 retailers interviewed carry one or more aerosols in stock!

The survey . . . conducted in July 1952 . . . was more extensive than earlier studies. It presents opinions and reactions obtained by interviewers in a total of 2,233 retail outlets in 60 cities throughout the United States. Interviews took place in stores of six major classifications of trade: department stores, drug, hardware, food, variety or 5 & 10¢ stores, and automobile supply stores and service stations.

STORE SIZE CONSIDERED

An innovation of the survey is the tabulation of results by store size: large, medium and small. This permits an even closer analysis of retail outlets. It compares percentage of various types of aerosol products stocked in stores of the three sizes. Differences are important. For example: 89% of large grocery stores stock aerosols, whereas only 45% of the small grocery stores reported that they carry aerosols in stock. However, as the chart above shows, there appears to be good distribution of aerosol products in drug stores regardless of store size.

REASON FOR STOCKING AEROSOLS

To determine why dealers stock aerosols, interviewers asked them for their opinion of the aerosol method of dispensing compared with other methods. In hardware stores, 81% informed interviewers that they believe aerosols are better. In both department and drug stores, 75% gave a similar reply. Asked why they considered aerosols better, dealers listed the following eight main reasons:

Easier to use	42%
More convenient	25%
Not greasy or messy	18%
Works well, effective, better	11%
Faster to use	11%
Better control	8%
No waste	6%
More economical	5%

TREND TOWARD AEROSOL PACKAGING CONTINUES

The study shows that there has been a consistent increase in the kinds and types of aerosol products carried in stock by retailers. Although insecticidal aerosols still lead the parade in all classifications of trade, many other pressure-packed products have appeared on the market and are steadily gaining in distribution. To illustrate, the chart below shows the pattern for room deodorants in the six categories studied:

% OF DEALERS WHO STOCK AEROSOL ROOM DEODORANTS

Dept. Stores			Drug Stores			Grocery Stores			Hardware Stores			Variety			Auto Supply		
L	M	S	L	M	S	L	M	S	L	M	S	L	M	S	L	M	S
68	46	*	87	77	86	53	49	37	51	46	43	37	48	34	8	6	10

*Only 1 small department store stocked aerosols, so no data is shown because sample is too small. L=Large M=Medium S=Small.

DU PONT
REG. U.S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

"FREON" SAFE

STOCK AEROSOL PRODUCTS

IMPORTANCE OF DEPENDABLE PROPELLENTS

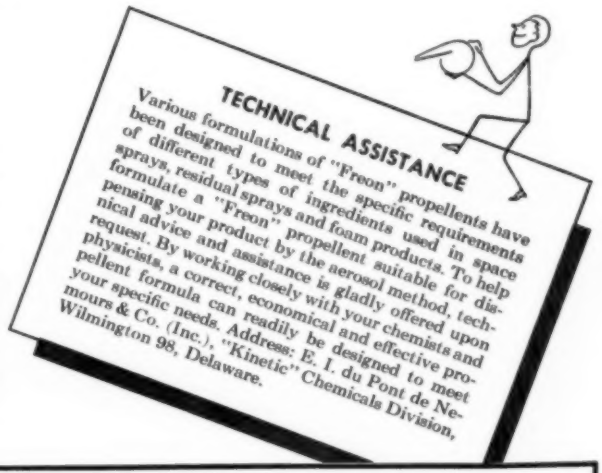
Ever since introduction of aerosols in the form of "bug bombs" used by our troops when they were in the tropics during World War II, the success of pressure packaging has depended upon the inert propellent used to dispense active ingredients of the product.

Just as wartime insecticidal aerosols were propelled by a "Freon" propellent . . . so also are the vast majority of aerosol products on the market today. There is good reason why.

"Freon" propellents are of the finest quality obtainable. They are scientifically made by intricate, laboratory-controlled methods of manufacture. Care and precision are production essentials that insure the degree of purity and uniformity for which these propellents are known. "Freon" propellents are safe . . . nonflammable, nonexplosive, virtually nontoxic, and their extreme dryness (maximum moisture content: 15 ppm for "Freon-12"—"Freon-11" solutions) further insures the satisfactory performance of modern, pressure-packed containers.

FREE DIGEST OF THE STUDY

Because the survey is of timely interest and value to manufacturers of a wide variety of products, highlights have been published in a 20-page digest entitled: "The Aerosol Market." Tabulations of the nationwide findings can serve as a guide in considering and evaluating this rapidly expanding market. If you would like a copy of the digest, please request it on your company letterhead.


TECHNICAL ASSISTANCE
Various formulations of "Freon" propellents have been designed to meet the specific requirements of different types of ingredients used in space sprays, residual sprays and foam products. To help formulate a "Freon" propellent suitable for dispensing your product by the aerosol method, technical advice and assistance is gladly offered upon request. By working closely with your chemists and physicists, a correct, economical and effective propellent formula can readily be designed to meet your specific needs. Address: E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.

PROPELLENTS

KINETIC

"FREON" is Du Pont's registered trade-mark for its fluorinated hydrocarbon propellents.

The bottles in our new 439 line are thoroughly practical as well as attractive . . . ideally suited for use both at home and traveling. They can be supplied plain or with fired-on ceramic labels. Available from stock in 1/2, 1, 2, 4 and 8 ounce sizes.

CARR-LOWREY GLASS CO.

Designers and manufacturers of fine glass containers

Factory and Main Office: BALTIMORE 3, MD. • New York Office: 40 W. FORTIETH ST. • Chicago Office: 1572 MERCHANDISE MART

Headliners again in 1953

STICK CONTAINERS FOR —

COLOGNE · DEODORANT
SOLID HAND LOTION · AFTER SHAVE

In Glass

WITH HIGHLY-POLISHED GOLD TONE CAPS

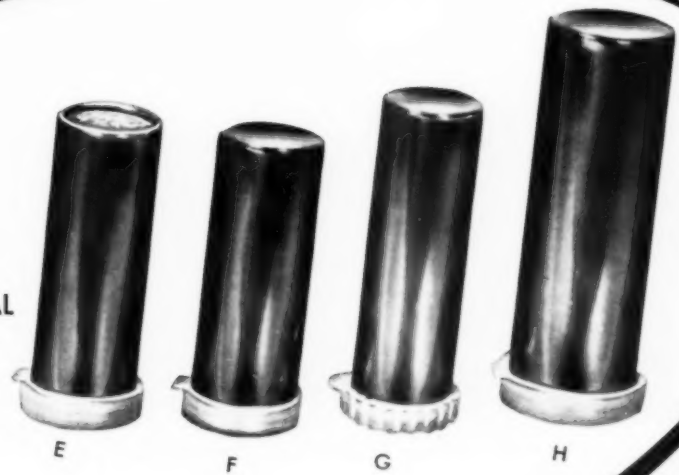
A. B48 PLAIN, 2-2½ oz.*
B. B48 FANCY, 2-2½ oz.*
C. B32 (Threaded polished brass cap), 1 oz.*
D. B31 (Polyethylene snap cap base), ¾ oz.*

AND THE **NEW**
PURSE SIZE STICK CONTAINERS

In Metal

HIGHLY-POLISHED GOLD TONE, WITH POLYETHYLENE SNAP CAPS FOR TIGHT SEAL

E. EF292 (Push-up with foolproof push-up seal), ½ oz.*
F. TF291, ½ oz.*
G. AR284, ½ oz.*
H. LF293, ¾ oz.*



RICHFORD
CORPORATION

Write for samples and prices

*Approx. Net

251 FOURTH AVENUE, NEW YORK 10, N. Y.

TOILET GOODS ASSOCIATION *to* "FACE FACTS" *at* CONVENTION

THE COSMETIC AND TOILET PREPARATIONS INDUSTRY over a period of more than fifty years has met annually in a convention. Years ago these meetings were notable for the elaborate variety of their entertainment features. But with the austerity of wartime conditions beginning in the early '40s, the entertainment features were discontinued and a solid and serious three-day program of business sessions was inaugurated. Immediately the convention took on greater stature as an industry event and at the close of the war the Association decided to continue its straight business pattern.

THIS YEAR, because of the multiplicity of problems facing the industry, both in production and in distribution, the program committee for the convention has chosen for its theme "Let's Face Facts". Around this theme an excellent business program is in the course of preparation and the details will be announced in this space next month.

Where and When?

THE CONVENTION will be held at the Waldorf-Astoria Hotel in New York City on May 12, 13 and 14th. The first two days will be general business sessions and the third day will be devoted to the rapidly-growing Scientific Section of the Association.

Who may attend?

ANY MANUFACTURER of finished perfume, cosmetics or other toilet preparations may attend. In addition, a cordial invitation is extended to wholesalers and retailers of the industry's products. At this particular convention this group is likely to find more in the business program of interest to it than has been the case in previous years.

SUPPLIERS OF RAW MATERIALS, packaging, machinery and services to the manufacturers of perfumes, cosmetics and toilet preparations all are eligible for Associate Membership in the Toilet Goods Association. Many of our friends in these industries have supported the Association for a long period of years by joining as Associate Members and taking an active part in our proceedings. *Attendance of these suppliers of goods and services this year will be strictly limited to those who are Associate Members of the T.G.A.*

Added Features

ON THE DAY preceding the convention—Monday, May 11th—the Toilet Goods Industry Golf Tournament will be held at Winged Foot in Mamaroneck, N. Y., one of the finest courses in the metropolitan area. Three important trophies will be played for in addition to a large number of other interesting prizes. They are the Cecil Smith Memorial Trophy, the B. M. Douglas Memorial Trophy and the B. E. Levy Memorial Trophy. The last two are to be played for the first time this year.

THE CONVENTION will be a success if members of the industry will attend and take part in the proceedings. We express the hope that the toilet goods industry this year will have its greatest and most interesting meeting. Within a short time you will receive a further announcement and a reservation blank by mail. Early reservations are highly desirable. When you receive the blank, please fill it out and return it as soon as possible.

THE TOILET GOODS ASSOCIATION, INC.
9 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

Further advertisements in this series will present to the industry what we feel will be an interesting picture of your Association's activities. Please read them and get to know us better.

News . . .

Merek-S. and D. Merger

The boards of directors of both Merck & Co., Inc., and Sharp & Dohme, Inc., have approved the principal terms of a merger of the two companies for submission to stockholders some time before May 5, according to a joint statement by George W. Merck, chairman of Merck, and John S. Zinsser, chairman of Sharp & Dohme. The name of the combined company will be Merck & Co., Inc. The distinct functions of each of the firms will be maintained and the business of Sharp & Dohme will be continued under the Sharp & Dohme name, operating as much as possible as a decentralized unit under its present management.

GEORGE W. MERCK

The officers of the combined company will include George W. Merck as chairman of the board and John S. Zinsser, vice-chairman. James J. Kerrigan will be president of the combined company and William L. Dempsey will continue to head Sharp & Dohme as its president.

The board of directors will be increased to 16 so as to include 4 members from Sharp & Dohme's present board. Other officers of Sharp & Dohme will be nominated for appropriate positions in the management of the business.

The principal terms of the merger are as follows:

For each present share of Sharp & Dohme's common stock there will be issued 2¼ shares of Merck's common stock.

For each present share of Sharp & Dohme's $4.25 cumulative preference stock there will be issued one share in a new series of Merck's second preferred stock. The new series will have the same $4.25 dividend rate and redemption rights as Sharp & Dohme's present cumulative preference stock, and, as is now the case with that stock, no conversion rights into common.

Both the new and existing series of Merck's second preferred stock will have the benefit of an annual purchase fund to purchase, if available at a cost for each share not exceeding $100, up to 2 per cent of the outstanding shares of each series, until 5 per cent or less of the issued shares of second preferred stock remain outstanding, and then 1 per cent.

No change is to be made in the terms of Merck's $3.50 cumulative preferred stock nor of its presently outstanding common stock. No change will be made in its existing $4 convertible second preferred stock, except for the addition of the purchase fund.

JAMES J. KERRIGAN

Leppart Named Squibb President

John C. Leppart, executive vice-president of Mathieson Chemical Corp., has been appointed president of E. R. Squibb & Sons division, according to Thomas S. Nichols, president and chairman. A final plan of organization has been completed to conduct the corporation's rapidly growing and more diversified business.

The following officers have been named to the newly-established executive committee: Thomas S. Nichols, president; Mr. Leppart, Squibb president; Stanley deJ. Osborne, financial vice-president; Carl F. Prutton, vice-president responsible for research and engineering; Russell Hopkinson, vice-president responsible for commercial development and Theodore Weicker, Jr., vice-president responsible for all overseas activities.

Carbide & Carbon Appointments

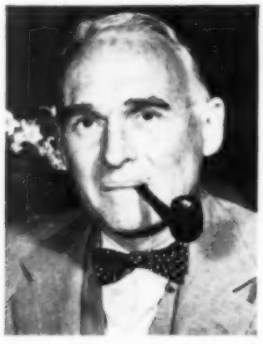
H. D. Hughes has been appointed general sales manager and E. E. Fogle, sales manager, of the Industrial Chemicals division, Carbide and Carbon Chemicals Co., according to W. F. Reich, Jr., vice-president.

Levings Named Sales Rep. by Gair

Robert H. Levings has been appointed sales representative for Foiline cartons, according to Richard T. Clark, sales manager of the Gair-Reynolds Foiline division of Robert Gair Co. He had been a sales representative for 9 years in the packaging division of Reynolds Metals Co.

Ritter Appointed by Stokes

L. E. Ritter has been appointed sales engineer in charge of the St. Louis office of F. J. Stokes Machine Co. He will serve the states of Kansas, Missouri, Arkansas, Louisiana, New Mexico, Oklahoma, Texas and Illinois.



JOHN S. ZINSSER

American Perfumers' Elections

The following officers were elected for the year 1953 at the annual business meeting of the American Society of Perfumers, Inc., in New York on January 21: Fred W. Fielding, Snyfleur Scientific Laboratories, chairman; Albert J. Dillinger, van Ameringen-Haebler, president; Roy J. Huttleston, Naugatuck Aromatics, vice-president; William H. Barlow, Orbis Products Corp., secretary; R. B. Houk, Dodge & Olcott, treasurer; and Everett D. Kilmer, Lever Brothers, who was elected to the board of directors for a 3-year term.

Elected to membership during the meeting were Paul H. Lelong, Warner-Hudnut; Oliver L. Marton, Shulton; Maurice A. Meunier, Les Parfums de Dana; Thomas Miserendino, Ph. Chaleyer Inc.; Pierre L. Rougny, Houbigant; Edward J. Shuster, van Ameringen-Haebler; Francis H. Sloan, Roubechez; and Franya H. Zibrosky, Orbis Products Corp.

Sims Appointed by Pitman-Moore

Wallace S. Sims has been named to direct the public relations activities of Pitman-Moore Co., according to K. F. Valentine, president.

Durrer, President of Givaudan

At the annual meeting of the board of directors of the Givaudan Corp., E. R. Durrer was elected president of the company and its affiliate organizations, Givaudan - Delawanna, Inc., Givaudan Flavors Inc., Sindar Corp., and Givaudan-Foreign, Inc. He succeeds Dr. Eric C. Kunz, who had retired from active management in 1947. At that time, Mr. Durrer assumed the executive management in his capacity as executive vice-president.

Other officers elected by the board were Xavier Jwaucher, as chairman; F. N. Bangs, vice-president and secretary; H. F. Duffy, treasurer; Dr. Max Luthy, vice-president in charge of production and research; and R. E. Horsey, vice-president in charge of sales.

Yarbrough, P-D Branch Mgr.

Nelson L. Yarbrough has been appointed Atlanta branch manager of Parke, Davis & Co., succeeding William L. Johnson who retired February 1 after 34 years of service to the company.

Swearingen in New Lilly Post

O. B. Swearingen has been appointed to the new position of staff assistant to the director of the sales division of Eli Lilly & Co. E. B. Kipfer is director of that division.

Until a new district manager can be appointed for Memphis, this post is being temporarily filled by John F. Lee, director of the bulk sales division in Indianapolis.

New Shipping Centers for Sterling

Three new shipping centers have been established by Sterling Drug Inc. in Minneapolis, Omaha, and in St. Louis, in addition to the long-existing shipping center in the Chicago branch. These four centers will ship products of the Bayer Company division and the Chas. H. Phillips Co. division to customers in 14 midwest states.

All orders emanating from the Midwest for products of these two divisions should be sent to the main offices at 1450 Broadway, New York 36. They will be released immediately to the shipping point nearest to the customer, who will be billed after the merchandise is shipped.

E. R. DURRER

O. B. SWEARINGEN

DR. JOHN H. BIEL

Miss Wright, V.P., Christian Dior

Anne Wright has been appointed executive vice-president of Christian Dior Perfumes Corp. She had joined the organization as sales manager a year ago, and prior to that, had been vice-president of Parfums Schiaparelli Inc.

Fallek Named Astra Representative

Fallek Products Co. has been appointed exclusive United States representative of Astra Chemicals Ltd., Bridgewater, England, for pure crystalline Vitamin D_2 (Calciferol).

Biel Promoted by Lakeside

Dr. John Hans Biel has been promoted by Lakeside Laboratories, Inc. to chief of the division of medicinal chemistry, according to Dr. H. L. Daiell, vice-president and scientific director.

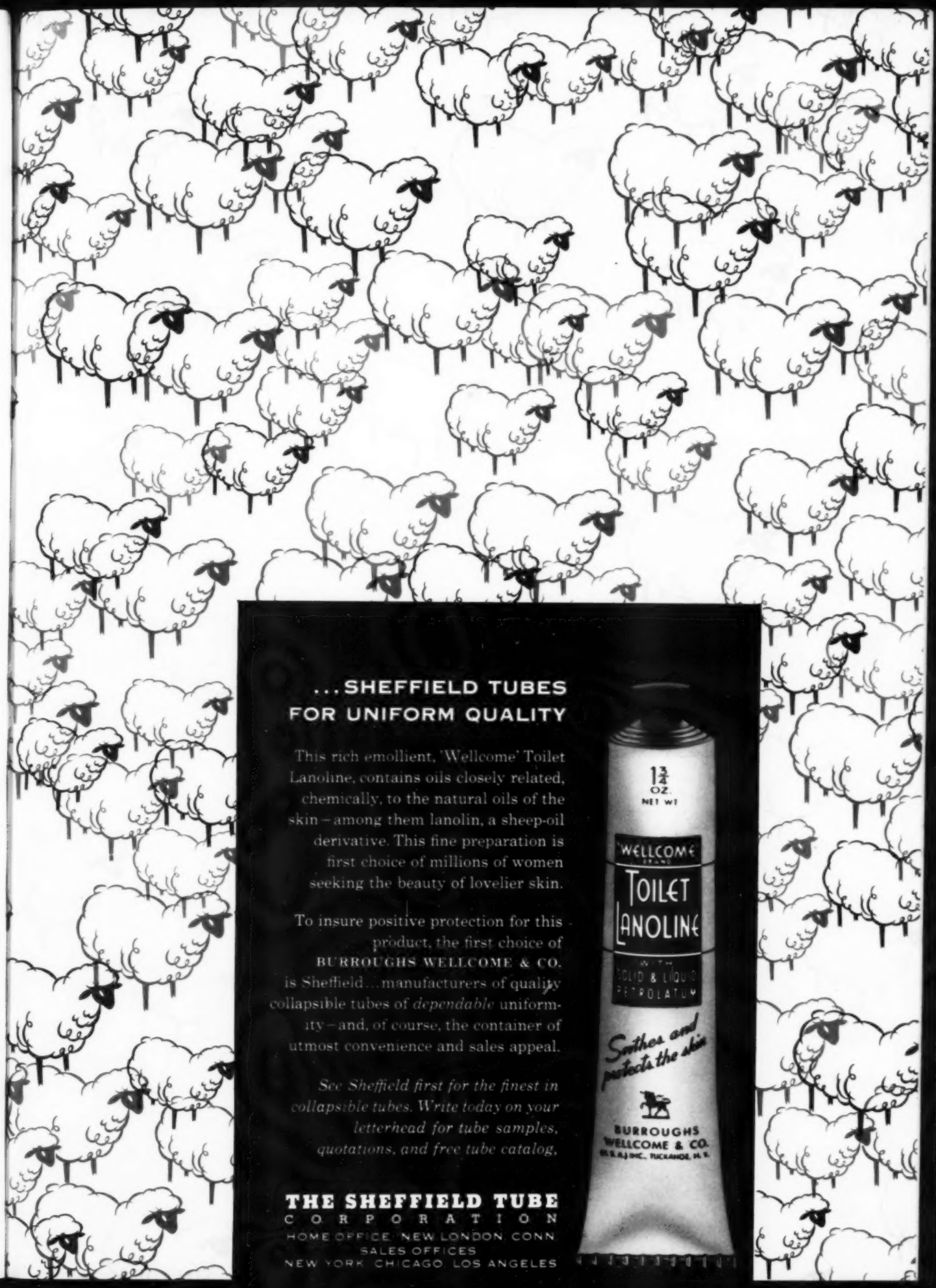
Procter Medal to Anslinger

Rear Admiral Richard E. Byrd, noted polar explorer, was the guest speaker at the 92nd annual dinner of the Philadelphia Drug Exchange on February 5 at the Warwick Hotel. Over 300 representatives of various pharmaceutical companies and their suppliers attended the dinner which was presided over by A. B. Collins, president of the National Drug Co.

The Procter Medal was awarded by the Exchange to Harry J. Anslinger, U. S. Commissioner of the Treasury Bureau of Narcotics.

Prior to the dinner, Admiral Byrd visited the offices and laboratories of the National Drug Co., escorted by Mr. Collins.

U. S. Narcotics Commissioner Harry S. Anslinger being presented Procter Medal at the annual meeting of Philadelphia Drug Exchange in recognition of outstanding service to profession of pharmacy. Left to right: A. B. Collins, president, Phila. Drug Exchange; Dr. Charles E. Vanderkleed, former Medalist; Rear Admiral Richard E. Byrd, guest speaker; Mr. Anslinger; and Dr. Ivor Griffith, president, Phila. College of Pharmacy.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FOR UNIFORM QUALITY
This rich emollient, 'Wellcome' Toilet Lanoline, contains oils closely related, chemically, to the natural oils of the skin – among them lanolin, a sheep-oil derivative. This fine preparation is first choice of millions of women seeking the beauty of lovelier skin.
To insure positive protection for this product, the first choice of BURROUGHS WELLCOME & CO. is Sheffield ... manufacturers of quality collapsible tubes of *dependable* uniformity – and, of course, the container of utmost convenience and sales appeal.
See Sheffield first for the finest in collapsible tubes. Write today on your letterhead for tube samples, quotations, and free tube catalog.
THE SHEFFIELD TUBE
CORPORATION
HOME OFFICE NEW LONDON, CONN.
SALES OFFICES
NEW YORK CHICAGO LOS ANGELES
1 3/4 OZ. NET WT
WELLCOME
TOILET LANOLINE
WITH SOLID & LIQUID PETROLATUM
Soothes and protects the skin
BURROUGHS WELLCOME & CO.

GRIP . . . BEND . . . SNAP—
Neutraglas Color-Break Ampuls are ready to use!

Now-give your product perfect protection in new KIMBLE COLOR-BREAK AMPULS

Here's the package you've always wanted—can't be tampered with . . . keeps your product pure and unadulterated . . . and, now, *easy to open.*

Neutraglas Color-Break* Ampuls are inert to their contents. Solvents, chemicals, sterilizing agents—even distilled water—find these ampuls persistently indifferent to chemical action.

There's no filing . . . no scoring . . . no sawing! Simply hold one of these new ampuls in your hands . . . bend it, and the stem snaps off! Presto, it's ready for use. Think of the convenience you can offer the users of your products.

The secret of this revolutionary Kimble development—the result of nine years' work—is in the patented blue color band around the neck of the ampul. This color-break feature is the greatest improvement in ampuls since the development of Neutraglas containers. *Decide today to modernize your ampul package.*

KIMBLE GLASS COMPANY

Toledo 1, Ohio—*Subsidiary of Owens-Illinois Glass Company*

*Owens-Illinois Trade Mark

Cassullo Elected D&O Head

John L. Cassullo was elected president of Dodge & Olcott, Inc., at a special directors meeting, to succeed the late Joseph F. Rudolph. Other officers elected were R. V. Behrens as treasurer, replacing F. H. Kirn, resigned; Fred H. Leonhardt, Jr., secretary, as well as vice-president in charge of production and research; and L. Young, assistant treasurer.

Additional officers of the company are H. V. Fischer, first vice-president; and C. O. Homan, vice-president in charge of sales.

Klipstein, 1953 Medalist

Kenneth H. Klipstein, assistant general manager and head of the technical department of the Calco Chemical division of the American Cyanamid Co., has been named the 1953 medalist for the annual award conferred by the Commercial Chemical Development Association for outstanding accomplishment in commercial chemical development.

The award will be made at a dinner in honor of Mr. Klipstein following the annual open meeting of the Association on March 23 at the Statler Hotel, New York.

Neader Named Heyden Sales Rep.

Scotty Neader has been appointed sales representative of Heyden Chemical Corp. in the Chicago district sales office.

Smith, New England Representative

Richard C. Smith, Jr. has been appointed New England representative of Stokes and Smith Co., subsidiary of Food Machinery and Chemical Corp. He will handle the S & S Paper Box Machines and S & S Filling and Packaging Machines, and will be located in Needham, Mass.

JOHN L. CASSULLO

KENNETH H. KLIPSTEIN

RICHARD C. SMITH, JR.

New Virus Lab. for Wyeth

Wyeth Laboratories is building a new laboratory building at Marietta, Penna., for applied research in viruses, according to Harry S. Howard, president. It will be completed in May. The building will be completely isolated for working with live virus, including mechanical equipment for sterilizing the interior with live steam. All permanent fixtures will be recessed and all lighting will be moisture proof as an added sanitary precaution.

Prizer Appointments, Groton Plant

A. T. Nielsen, head of the organic chemical department, has been appointed assistant superintendent of the Groton plant of Chas. Pfizer & Co., Inc., according to Herman A. Poitras, vice-president in charge of production. Thomas G. Drustrup, assistant to Mr. Nielsen in the organic chemical department, has been promoted to department head.

Ercoli Joins Armour Laboratories

Dr. Nicholas Ercoli has joined Armour Laboratories as head of the department of pharmacology and chemotherapeutics in its research division. He had formerly been scientific director of the Instituto Sieroterapico Milanese Serafino Belfanti at the University of Milan. Before returning to the University of Milan, Dr. Ercoli had been employed by the Warner Institute for Scientific Research and Hoffmann-LaRoche.

Kaplan to Receive Lilly Award

Professor Nathan O. Kaplan of the Johns Hopkins University will receive the $1,000 Eli Lilly & Co. award in Biological Chemistry in Los Angeles on March 16, according to Professor Farrington Daniels, president of the American Chemical Society. The presentation will take place at a general assembly in the Hotel Statler during the Society's 123rd national meeting.

Professor Kaplan helped discover "Coenzyme A," a material which has an important role in the body's metabolism of fats and sugars.

Scott with Zimmerman

Wilfred F. Scott, formerly of Houbigant, has been appointed western sales manager for W. F. Zimmerman, Inc.

Fritzsche Brothers executives officiating at opening of new Toronto administration offices and plant of Fritzsche Brothers of Canada, Ltd. Left to right: Ian MacInnes, sales representative; Fred H. Leonhardt, Jr., vice-president; F. H. Leonhardt, president; Joseph A. Huisking, vice-president; Harry J. Stesco, office manager; Leslie Joyner, secretary; and Lloyd W. Speck, vice-president in charge of sales.

One way to cut process costs: Start with a Baker FINE CHEMICAL OF CONTROLLED PURITY

Many far-seeing production men know that it is not the *first* cost of a raw material that counts. It's the *final* cost of *producing* a finished product.

When you start with a fine chemical of uniform quality and high purity, you improve processing, eliminate purification steps, cut production costs.

You can *depend* upon Baker Fine Chemicals to give you trouble-free manufacturing. This is true because of Baker's precise chemical standards, and because Baker is able to supply chemicals with tailor-made characteristics.

Above are shown just a few Baker Fine Chemicals. For a complete list with current prices, simply write to this address: J. T. Baker Chemical Co., *Executive Offices and Plant,* Phillipsburg, New Jersey.

Baker CHEMICAL

Baker Chemicals

REAGENT • FINE • INDUSTRIAL

Lilly Reorganization

Burton E. Beck has been appointed executive director of personnel and public relations, a new unit created by Eli Lilly & Co., having formerly been the industrial relations division. E. Hardey Adriance has been made director of the personnel relations division and John F. Modrall, director of the plant communications and public relations division.

BURTON E. BECK

Helena Rubinstein in Europe

Princess Artchil Gourielli (Helena Rubinstein) is spending two months in Europe in order to visit factories in France, England and Switzerland. She is making her headquarters in Paris. Madame de Barros, managing director of Helena Rubinstein in Brazil, and Richard T. Augenblick, export manager in New York, are accompanying her.

E. HARDEY ADRIANCE

Firesteins on European Trip

Max Firestein, executive vice-president of Max Factor & Co., and Mrs. Firestein, have departed on a 4½-month combination business and pleasure trip to eight European countries. They will visit and inspect their company's branches and distributing agencies in England, France, Holland, Belgium, Germany, Switzerland, Italy, and Israel.

JOHN F. MODRALL

Atlas Buys 45-Acre Site

Atlas Powder Co. has acquired a tract of land of about 45 acres near Wilmington, Del., for the construction of a new and modern air-conditioned office in suburban surroundings.

The new building will include various administrative departments of Atlas as well as 400 employees now located in downtown Wilmington. Completion and occupancy is expected within three years. No laboratory or manufacturing activity, according to Isaac Fogg, president, will be moved to the new building.

New Squibb Branch in Denver

The new branch in Denver of E. R. Squibb & Sons, division of Mathieson Chemical Corp. was formally opened on January 23, with Mayor Quigg Newton officiating at the ribbon-cutting ceremony. About 2,000 physicians and pharmacists and their families attended the affair.

This branch will serve Colorado, Wyoming, Utah, and parts of New Mexico, Arizona, Nevada and Idaho. Located at 4940 Jackson St., the branch covers 20,000 square feet and includes both sales offices and warehouse.

Regional hosts for the occasion were division sales manager M. A. Fortner and branch manager J. T. Ke ly. Squibb executives from the New York office were J. J. Toohy, vice-president; W. L. Arscott, field sales manager; H. J. Towers, retail distribution manager; and J. A. Dillon, distribution manager.

Sterwin Establishes Canadian Unit

Sterwin Chemicals Inc., a subsidiary of Sterling Drug Inc., has organized a new company in Canada known as Sterwin Chemicals of Canada Ltd., in order to serve more efficiently and economically the concern's expanding business in the Dominion, according to P. Val Kolb, president. Headquarters have been established at 1019 Elliott Street West, the home of Sterling Drug Mfg. Ltd.

In addition to the Windsor plant, Sterwin products will be stocked at warehouse depots located at Fort Erie, Winnipeg and Montreal.

Colgate Succeeds Kendall-Squibb

W. B. Colgate has been appointed manager of the department of product planning, E. R. Squibb & Sons, replacing C. O. Kendall who has resigned, according to R. J. Dahl, vice-president for research administration. He had formerly been in charge of overseas product planning.

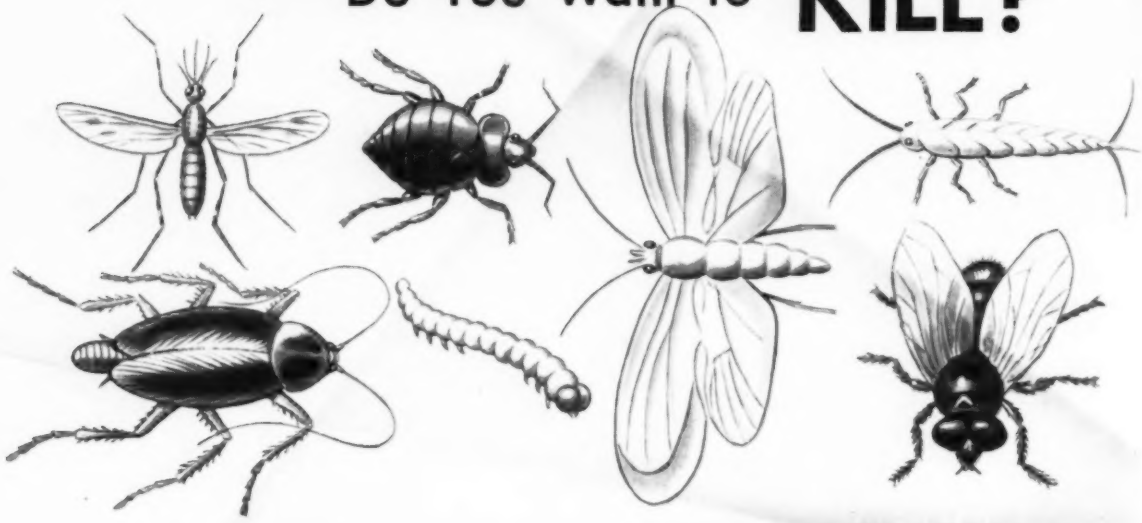
Heads Maltbie Medical Research

Dr. Harold S. Feldman has been appointed director of medical research for Maltbie Laboratories. He has had experience in internal medicine, public health, and teaching at medical and pharmacy schools.

Mayor Quigg Newton, Denver, cutting ribbon to mark the formal opening of the new Denver branch of E. R. Squibb & Sons. Looking on are Squibb executives M. A. Fortner, division sales manager; J. J. Toohy, executive vice-president; and J. T. Kelly, branch manager.

SPRA-TAINER Does It Again!

Which of These Insect Pests Do You Want to KILL?



Famous FLIT now s-p-r-a-y-s automatically from Crown SPRA-TAINER to kill many household insects the modern and convenient way. When you press the valve, small particles of deadly insect-killing ingredients are forced into the air. These small particles of insecticide float for some time and kill many insects on contact.

SPRA-TAINER is the world's original and leading propulsion can. Its exclusive "Modern Design" and "No Top Seam—No Side Seam" construction are impressive examples of Creative Engineering, an attribute which enables all lines of Crown Cans to serve American Industry with dependability and distinction.

CROWN CAN
PHILADELPHIA
Division of
CROWN CORK & SEAL COMPANY
One of America's Largest Can Manufacturers

PHILADELPHIA, CHICAGO, ORLANDO, NEW YORK, BALTIMORE, ST. LOUIS, BOSTON

Parke-Davis Executive Promotions

Thomas C. Anderson, director of production and engineering, Parke, Davis & Co., has been promoted to vice-president and director of production and engineering, and Graydon L. Walker, director of United States and Canadian sales, has been promoted to vice-president and director of United States and Canadian sales and promotion.

At the same time, Carl Johnson was promoted to United States and Canadian sales manager.

Winarick Buys Dr. Ellis Sales

Ar. Winarick, Inc. has purchased the business and all assets of Dr. Ellis Sales Co., Pittsburgh. Winarick is planning to operate the company as a separate division, according to Nat Winarick, secretary and chief chemist.

Dow Aromatics Changes Address

The aromatics sales office of the Dow Chemical Co., formerly located at the company's aromatics laboratory in Jersey City, has been moved to Dow's New York office at 30 Rockefeller Plaza, according to Donald Williams, director of sales.

Edward A. Bush and William F. Meeks, aromatics salesmen who formerly made their headquarters at the laboratory, are now associated with the New York office sales staff.

Lynn Succeeds Malcolmson at Gair

Alan Grayson Lynn has been appointed manager of Robert Gair Co.'s products development department for shipping containers and related products, according to George E. Dyke, president. He succeeds J. D. Malcolmson, well-known packaging expert, who has moved to Berkeley, Calif. Mr. Malcolmson will remain on Gair's staff and will continue to represent the company on various committees on which he now serves.

Max Factor, Jr. (center), standing with A. J. Klein, managing director of Max Factor Hollywood & London (Sales) Ltd., and Eve Gardiner, Factor's director of make-up in England, prior to their return to London. They attended the 1953 sales conference.

McNight Marks 80th Birthday

James McKnight, salesman for George Lueders & Co., celebrated his 80th birthday on January 28. He has been with the company over 47 years and is in excellent health and is as active as ever. He covers the near-western part of the country and also looks after certain trade in the Metropolitan area.

Van Kirk Retires from Squibb

C. M. Van Kirk, executive vice-president of E. R. Squibb & Sons, division of Mathieson Chemical Corp., has retired after 26 years' service, according to John C. Leppart, executive vice-president of Mathieson. John J. Toohy, sales vice-president, has succeeded Mr. Van Kirk. Additional promotions within the Squibb division include W. R. McHargue as vice-president in charge of advertising and marketing, and W. L. Arscott, vice-president and sales manager of domestic operations.

Beyer Named Botany Director

Fred Beyer, president of P. R. Dreyer, was elected a director of Botany Mills, Passaic, N. J., last month.

Vanilla Bean Ass'n Elections

J. R. Maxwell, Camax Co., was elected president of the Vanilla Bean Association of America, Inc. at a recent annual meeting; H. Solomon, F. Huber Co., vice-president; and J. Manheimer, of J. Manheimer, treasurer. E. S. Buckley, Thurston & Braidich; James Schmidt, Dammann & Smeltzer, Inc.; and W. H. Triest, Zink & Triest Co., were named directors.

Pope Heads Pharmaceutical Sales

Dr. Frank B. Pope has been named manager of pharmaceutical sales of National Aniline division, Allied Chemical & Dye Corp. He had formerly been attached to the division's Chicago office in the sale of intermediates and pharmaceuticals throughout the Midwest.

J. D. MALCOLMSON

JOHN J. TOOHY

DR. FRANK B. POPE

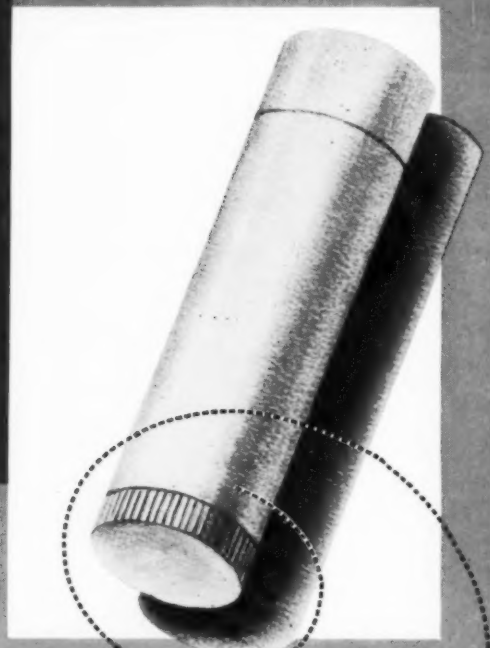
The Smartly Styled

PROPEL-REPEL

AIRTIGHT SHRINK-PROOF CONTAINER*

For Merchandising

SOLID COLOGNE · SOLID TOILET WATER
FACIAL AND HAND CREAMS
DEODORANTS · AFTER SHAVE LOTIONS



calumet **Swivelpak**®

GIVE *YOUR* PRODUCT THE PACKAGING IT DESERVES —GIVE YOUR CUSTOMER THE CONTENT SHE PAYS FOR

- **Purse Size, ½ ounce capacity.**
- **No molding required, product can be poured directly into container.**
- **Eliminates necessity for costly foil wrapping.**

CALUMET Manufacturing Co., Inc.

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PLANTS: NEW YORK CITY, BLOOMFIELD, N. J., WATERBURY, CONN.
IN CANADA: CALUMET DIVISION OF ERIC H. HARDMAN, LTD.
137 WELLINGTON ST., WEST, TORONTO, CANADA

*PAT. PEND.

West Coast Branch for Endo Prods.

Endo Products Inc. has opened a new West Coast office and warehouse in Los Angeles, according to Joseph Ushkow, president, at 11400 West Olympic Boulevard. All West Coast sales and warehousing operations are directed from this building by H. L. Wellington, manager.

Drawing of new West Coast office and warehouse of Endo Products, Inc. in Los Angeles, which was officially opened in February. H. L. Wellington is the West Coast Manager.

GEORGE SHEPLEE

Gourielli Appointments

Horace Titus, formerly head of the Helena Rubinstein research laboratories in Grasse, France, has been appointed vice-president of Gourielli, Inc. George Sheplee, formerly district manager of the Philadelphia-Baltimore-Washington area of Helena Rubinstein, has become sales promotion director of Gourielli, and Patrick O'Higgins, assistant to Mr. Titus and publicity director.

Vick Chemical Promotions

George H. Gerlach, formerly manager of new products, Vick Products division, has been appointed special assistant to E. P. Anderson, president of Vick International division, and Henry A. Shull has become manager of new products, succeeding Mr. Gerlach. Mr. Shull had formerly been advertising manager of new products, Vick Products division.

Jones Retires from Parke, Davis

Stewart N. Jones, purchasing agent of Parke, Davis & Co., retired from the company early this month after 40 years of activity. He was responsible for buying millions of dollars' worth of bottles, packages and other materials for the company since 1912.

Whittaker, Rep. of Bell Mineral

Whittaker, Clark & Daniels, Inc. has been appointed eastern sales representative of the Bell Mineral Corp., supplier of "Oxford" grades of Feldspar. Bell was incorporated early in January, with Richard Bell, of the Bell Clay Co., as president, and W. Wallace Roff, Whittaker, Clark & Daniels, as vice-president.

Ferlauto Named by SKF

Robert J. Ferlauto, director of microbiological laboratories of Smith, Kline & French Laboratories, has been appointed associate director of development, according to W. Furness Thompson, vice-president in charge of research and development. He will be in charge of exploratory and specialty development, taking over the duties of Dr. Robert H. Tully who has been called to active duty with the Army Medical Corps.

Farrell Heads Drug & Chem. Club

Thomas R. Farrell, editor of DRUG AND COSMETIC INDUSTRY, has been elected president of the Drug & Chemical Club, New York, for the current year.

John O. Teeter, of Chas. Pfizer & Co., has been elected secretary of the club.

Gilliland, Wyeth Div. Sales Mgr.

Don E. Gilliland, Wyeth district sales manager of the St. Louis territory for the past five years, has been appointed division sales manager at Cleveland, according to Stuart V. Smith, sales vice-president. He succeeds D. O. Wilson who has been transferred to San Francisco as division sales manager for the West Coast.

McKenzie with Ferguson & Co.

D. D. McKenzie has joined the staff of R. M. Ferguson & Co., Toronto, as assistant to Ralph M. Ferguson. The company is the Canadian representative of Roubechez, Inc.

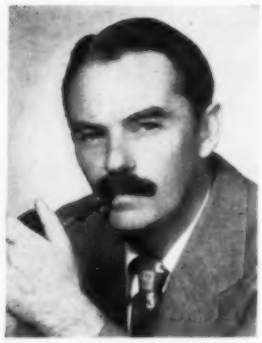
Fiore Appointed by Givaudan

A. T. Fiore has been appointed coordinator of new product development and service laboratories of Givaudan-Delawanna, Inc., and its affiliate, Sindar Corp., according to E. R. Durrer, president.

GEORGE H. GERLACH

HENRY A. SHULL

A. T. FIORE



WILLIAM HARDWICK

GARNETT W. VAUGHAN

WALTER CONKLIN

Hardwick, Factor Pub. Director

William Hardwick, export advertising manager and publicity director for Max Factor, has been appointed public relations director, according to Davis Factor, chairman of the board of Max Factor & Co.

Davis Establishes Own Company

Peter E. Davis, formerly vice-president of Ansbacher-Siegle Corp., has formed Davis Color & Chemical Co. Inc., distributors of dry and flushed pigments and allied products, and chemical specialties. The New York warehouse and office is located at 185 Christopher St., New York 14. The telephone number is WAtkins 4-7850.

Join Riker Laboratories

Dr. George L. Maison has been named vice-president and general manager of Riker Laboratories, along with the following appointments: A. H. Ridges, vice-president in charge of sales; J. A. Raynolds, vice-president in charge of manufacture; Dr. J. W. Stutzman, formerly head of the pharmacology section of Smith, Kline & French Laboratories, director of research and development; George Cronheim, formerly of the S. E. Massengill Co., director of new product research; and Dr. Norman W. Karr, director of clinical research.

Newsom, Vick Sales Manager

Edward B. Newsom has been promoted to sales manager of Vick Chemical Co., according to Kirby Peake, president of Vick Products division. Mr. Newsom joined Vick's advertising and sales training program in 1939.

Roubechez Opens Midwest Branch

Roubechez, Inc. has opened a midwestern branch at 7481 Shamrock Lane, Cincinnati 30, Ohio. Paul Brna, formerly with Magnus, Mabee & Reynard, is the resident manager.

Vaughan, Supt. of Manufacturing

Garnett W. Vaughan has been appointed superintendent of manufacturing for the A. H. Robins Co., Inc., according to E. Claiborne Robins, president. He is at present serving as acting plant manager, pending the completion of installations.

Gane & Ingram Expansion

Gane & Ingram, Inc. has completed their second plant expansion for the production of desoxycholic acid. For many years, Gane & Ingram and their associated company, A. Maschmeijer, Jr., pioneered in the conversion of ox bile to cholic, dehydrocholic and desoxycholic acids.

Thompson Resigns from Prentiss

Friar M. Tohmpson, Jr., vice-president of the Prentiss Drug & Chemical Co., and manager of its insecticide department, has resigned from the compay to establish his own consulting business in Athens, Ga. He was associated with Prentiss for 8 years and, prior to that, with Hercules Powder Co. for 15 years.

Interdonati Sets Up Own Firm

Henry R. Interdonati, for the past three years head of the chemical department of George Uhe Co., has resigned to organize Henry Interdonati, Inc. He will specialize in pharmaceutical and industrial chemicals, essential oils and insecticides, as a broker, sales agent and consultant.

His office is located at 855 Avenue of the Americas, New York, and the telephone number, LOngacre 4-0188.

Calamia on 5-Day Sales Staff

Eric Calamia, Jr., has joined the sales staff of 5-Day Laboratories, according to Bernard Gould, vice-president in charge of sales and advertising. He will cover the 11 western states, with headquarters in San Francisco.

Walter Conklin

Walter Conklin, a member of the sales staff of the Wallace Paper Box Co., and associated with the chemical and toilet goods industries for twenty-five years died at his home in Bronxville, N. Y., on February 5. He would have been 59 years old on February 10.

Mr. Conklin was a former president of the Foragers of America, and a charter member of the BIMS. Surviving him are his wife, Mrs. Florence Littlejohn Conklin; three brothers, Arthur A., William W. and Frank S. Conklin; and two sisters, Mrs. George Bate and Mary J. Conklin.

James P. McGovern

James P. McGovern, a leading specialist in distilled spirits and industrial alcohol legislative problems for many years, died February 15 in Washington, D. C. at the age of 76. He had served as legal counsel to the U. S. Industrial Alcohol Co. and a number of chemical trade associations during his career. He began his business career with U. S. Industrial Alcohol when that concern was formed in 1906, serving as secretary-treasurer from 1906 to 1910 and vice-president from 1910 to 1915. He thereafter became general attorney for the company, serving in that post for a number of years.

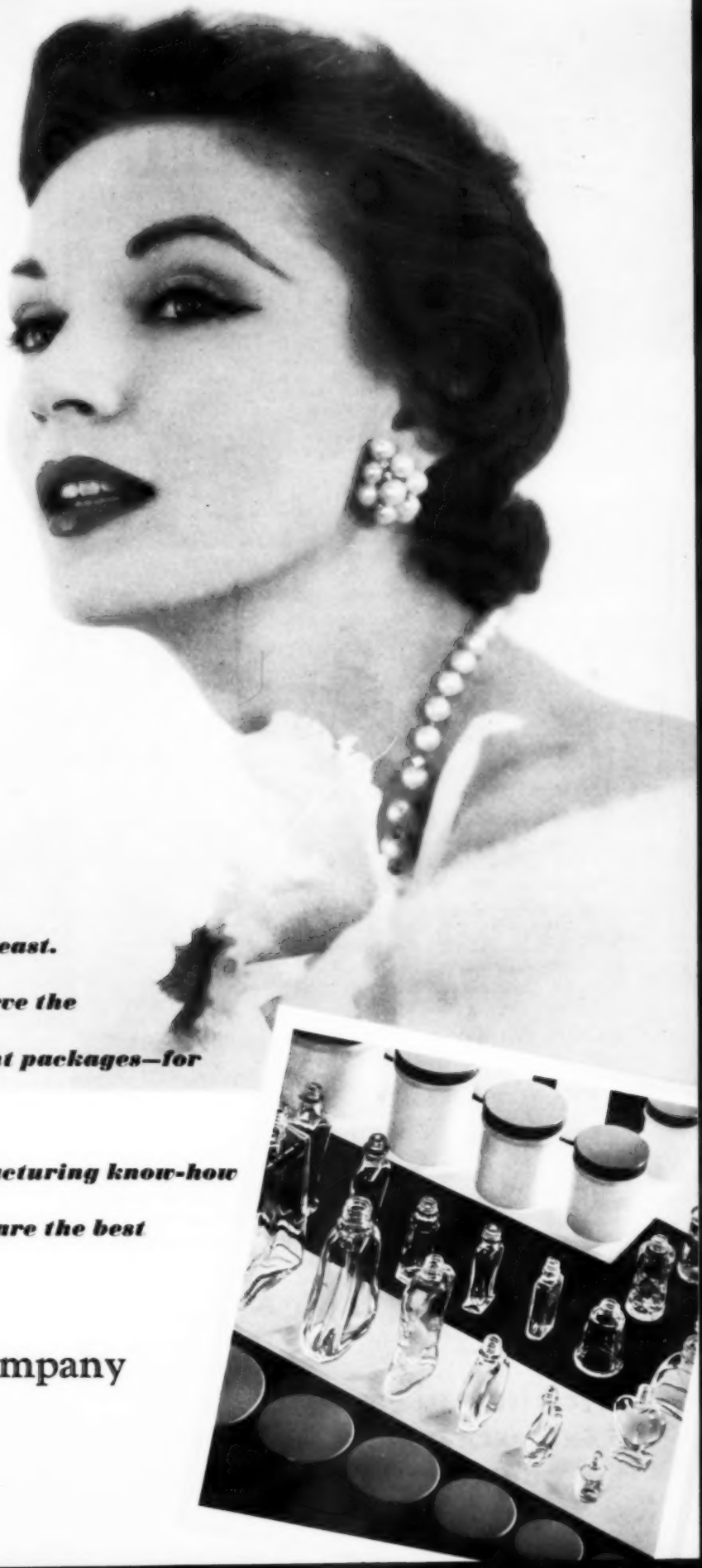
Dr. William H. Fry

Dr. William H. Fry, a retired executive of E. R. Squibb & Sons, died February 12 on a ship approaching Los Angeles. He was 77 years old.

Mrs. Ethel E. Bobst

Mrs. Ethel Emma Bobst, wife of Elmer H. Bobst, Warner Hudnut Co. president, died of a heart ailment on March 3 while on a yachting cruise in Nassau Harbor, Bahamas. The Bobsts were cruising with Mr. and Mrs. Douglas Brown, Montclair, and Mr. and Mrs. Helmuth Kiesewetter, South Orange, N. J.

Beauty and the Best



A trick headline? Not in the least.

Your cosmetic products deserve the handsomest and most efficient packages—for beauty must be sold.

Research, design and manufacturing know-how make Hazel-Atlas Cosmeticware the best containers for you.

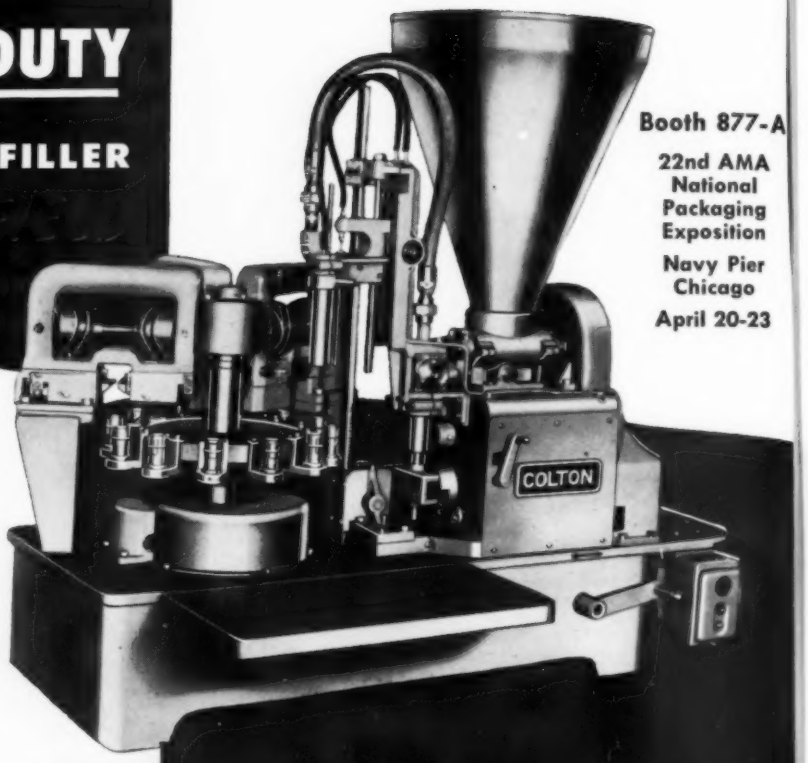
Hazel-Atlas Glass Company

Wheeling, West Virginia

HEAVY DUTY

SEMI-AUTOMATIC TUBE FILLER

IN THE



Booth 877-A
22nd AMA National Packaging Exposition
Navy Pier
Chicago
April 20-23

The new Colton No. 160 is the FIRST *heavy-duty,* full range tube filler in the low-price field.

It is the ONLY low-priced tube filler with the heavy construction necessary for handling heavy, ropey materials such as caulking compounds, etc. And, being a full range machine, it also fills every consistency of cream, paste and liquid, as well as powders, into tubes, jars, bottles or cans.

It provides semi-automatic, continuous operation with one attendant. New, direct-motion feeding and crimping mechanism. Famous Colton filler head and many other quality features as on higher-priced machines. Bench or stand type available. Capacity 36 tubes per minute; tube sizes up to 1½" x 7".

We suggest you write for specification sheet and catalog of sixteen cost-cutting items of packaging equipment including a complete line of hand-operated equipment.

ARTH

PLANT NO. 2
PLANT NO. 3

COLTON TUBE FILLER AND CLOSER No. 180

Companion machine to No. 175 with the same speed, precision and economy but designed for larger tube dimensions. Tube sizes up to 1¾" x 7½". Capacity up to 90 tubes per minute. Complete range of auxiliary equipment.

COLTON TUBE FILLER AND CLOSER No. 175

Modernized version of the world's most popular automatic tube filling machine; unmatched in speed, precision and economy in filling tubes, jars, bottles, cans, with pastes, creams, liquids, powders. Tube sizes up to 1½" x 7¼". Capacity up to 85 tubes per minute. Complete range of auxiliary equipment.

SPECIALISTS IN PHARMACEUTICAL AND PACKAGING MACHINERY FOR NEARLY 70 YEARS

Offices in Principal Cities

Trade Literature

Hygroscopic Agents

A "Fact File" on hygroscopic agents, surface active agents, and apparatus for their evaluation is available from Atlas Powder Company, Wilmington, Del. It comprises 83 pages, including 32 charts, 17 photographs, 9 drawings, 4 diagrams, 18 tabular presentations of data, and 4 bibliographies, reprinted from various sources.

U. S. Prescription Sales

The 1953 estimated prescription sales volume for every county in the U. S. is shown in a new 88 page book which is available to manufacturers selling the medicinal market from Research Dept., Modern Medicine, 80 South 10 St., Minneapolis 3.

Pressure Packing

A Guide to Pressure Packing is the title of a new 36-page plastic-bound book, profusely illustrated, recently issued by Crown Can Company, Philadelphia.

High-Surface Sodium

A booklet on high-surface sodium (HSS), another new form of sodium developed by U. S. Industrial Chemicals Co., 120 Broadway, New York 5, has just been released. The term HSS is applied to films of sodium approaching colloidal dimensions, spread over inert solids of high-surface area.

Dow's "Pharmaceutical Chemicals"

A new edition of Pharmaceutical Chemicals, a catalog of pharmaceutical and fine chemicals, has just been published by the Dow Chemical Company, Midland, Mich. This second edition contains much additional data and information, and has been restyled to improve readability.

Feed Supplement Concentrates

A new technical bulletin, Pro-Gro Feed Supplement Concentrates, has been published by Heyden Chemical Corporation, 342 Madison Ave., New York.

Sulfadiazine Bulletin

Sulfadiazine for Prevention of Streptococcal Infections is the title of bulletin No. 60 issued by Calco Chemical Division, Bound Brook, N. J.

Plastic Coating Booklet

Armstrong's Insulcolor, a plastic coating for use as both protection and color identification on insulated refrigerant, cold water, steam, and other lines and insulated equipment, is described in a bulletin issued by Armstrong Cork Company, Lancaster, Pa.

How to Pack It

Hinde & Dauch Paper Company, Sandusky, Ohio, has issued a newly revised book entitled, How To Pack It. Described as a complete packaging portfolio in one volume, the book illustrates and describes some 12 different styles and types of standard corrugated boxes, as well as 72 corrugated specialty boxes designed and engineered by the company. Shelf and counter boxes, display boxes, luggage-style boxes, Prepaks, Duplex (combination shipping-display) boxes, octagon boxes, Bin-Paks, heavy-duty shipping boxes, Form-A-Cell boxes, poultry and produce boxes all are shown in the 30 pages of the book.

Edwall Products & History

Edwall Laboratories, Ringwood, Ill., has issued a revised edition of their 24-page booklet describing Edwall's fine chemicals, background, and history.

Sulfoxide-Pyrethrins

S. B. Penick & Co., 50 Church St., New York 8, has published a new booklet describing sulfoxide-pyrethrins insecticide formulations. Specifications on the synergist, Sulfox-cide, are given, as well as specifications on the many sulfoxide-pyrethrins concentrates offered. Sections are devoted to Sulfoxide-Pyrexcel 20, an oil solution, Emulsifiable Sulfoxide-Pyrexcel 1-10, an emulsifiable concentrate, Pyrexcel Mill Spray Concentrate, an emulsifiable concentrate for use in mills, elevators, and granaries, and Pyrexcel Wettable Powder, a powder impregnated with sulfoxide - pyrethrins.

Booklet on Sulfa Drugs

Calco Chemical Division, American Cyanamid Company, Bound Brook, N. J., has issued a revised edition of technical bulletin No. 731 entitled Evaluation of Sulfa Drugs. The revised edition contains certain author and publication credits which were unfortunately omitted from the previous issue through error.

Choline Bulletin

Calco has also issued Bulletin No. 61 on Choline Deficiency and Atherosclerosis.

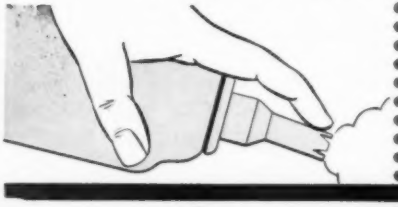
Monohydric Alcohols

M. Michel and Company, 90 Broad St., New York 4, has issued a booklet on Cachlot, which is the registered trade name for straight chain monohydric alcohols vacuum-distilled from the oils of the sperm whale. These higher aliphatic alcohols are non-ionic organic compounds, have little or no odor, cannot turn rancid, and are non-corrosive. Cetyl, stearyl, and oleyl alcohols are examples.

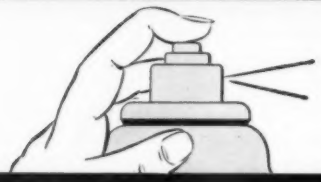
your customers will say of these

THREE NEW Pres-O Aerosol TOPS

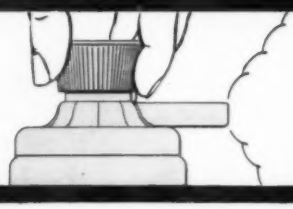
NEW in richness of design. NEW in ease of operation



TILT-TOP — For whipped cream, shaving cream and other foam products. Will bring new joy to users everywhere. Operated by tilting the top.



TOUCH-TOP — For cosmetics, hair lacquers, insecticides, paints — for anything that can be Aerosol sprayed. Light pressure does it. No finger fatigue. You can bet this top will get a BIG welcome.



TWIS-TOP — For spray *or* foam. Easiest to use. No parts to lose. Unit construction. Needs no over-cap. A twist opens or closes it. No after leak, drip or puff.

Pres-O Tops are styled to fit *your product*. You can have them in a wide choice of rich colors. They're wonderfully attractive and they'll add new sales appeal to your Aerosol package.

Here's the Pres-O #100 Series VALVE

which has proved such a phenomenal success in the cosmetics field. This Pres-O Valve has given satisfaction and trouble-free service to **MORE THAN TEN MILLION USERS!** Nothing else on the market compares with it • All metal working parts. Heavily tinned to resist corrosion • Holds spray pattern • Designed by engineers who have long specialized in Aerosol, it's **mechanically right and stays that way** • Available for every type of spray — and for foam too. • Suitable for Crown cans, for seamed cans, for every kind of Aerosol container.

Put your Aerosol valve problem up to the men who engineered the first successful shaving cream Aerosol dispenser. Ask us to prove these claims. You'll be glad you accepted this invitation to **INVESTIGATE!**

OIL EQUIPMENT
Laboratories, Inc.
Bridge Street • Elizabeth, N. J.

Management Forum

by Francis Chilson

INDUSTRIAL CONSULTANT

Thought for Today

It's a good thing DDT was discovered. Now British judges can wear their wigs comfortably and the Prime Minister can sit on the woolsack in the House of Commons without twitching.

Traveler's Fare

As a traveler who spends most of his time wandering about the country for good or ill, I thought a few observations based on experience might be helpful to you in your travels. Accordingly I have made a personal classification of railroad service as follows:

Food: (The Best) The Great Northern. (Runner Up) Sante Fe.
(The Worst) The Pennsylvania. (Runner Up) The New York Central.
Scenery: (The Best) Union Pacific. (Runner Up) Denver & Rio Grande.
Service: (The Best) Baltimore & Ohio (Runner Up) C. B. & Q.
(The Worst) Pennsylvania. (Runner Up) New York Central.
Courtesy: (Northern Pacific). (Runner Up) The Southern.
Comfort: (Twentieth Century, N. Y. C.) (Runner Up) Pittsburgher Penn. R. R.
Roughest Riding: The Pennsylvania.
Noisiest: The Pennsylvania. (Runner Up) The Erie.
Dirtiest: The Pennsylvania. (Runner Up) The Southern.
Most Punctual: The Milwaukee. (Runner Up) Illinois Central.

All in all it is still my considered opinion that none of the American railroads compare with those of Canada.

Truck Traffic

Everyone who ships cosmetics or drugs, which take the top freight classification however such goods are shipped, is concerned with the efficiency of transportation means. By and large there is no doubt that excepting for very long hauls trucking companies provide better and cheaper service than railroads. But trucks on our roads are a menace and a damned nuisance. Consequently trucking lines are under constant pressure from the traveling public and from the railroads, whose publicity agents and lobbyists in Washington and in all the state capitols make loud and misleading noises about the railroad's contribution to taxes and the stability of funds invested in railroads by insurance companies, savings banks, widows and orphans.

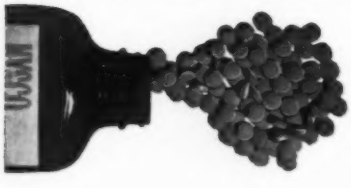
The fundamental fact of the whole absurd situation is that both railroads and trucking lines as primary haulers are necessary to our economy. But the railroads are everywhere considered a public utility but the trucking lines are not, even though in interstate commerce, trucking company rates are regulated by the Interstate Commerce Commission.

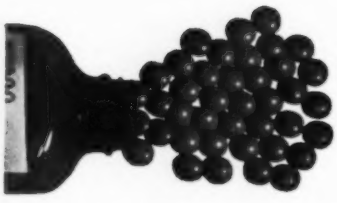
Because they are public utilities railroads are by the Federal and the multiplicity of state governments restricted by unfair, uneconomic and archaic regulations. Among these are that railroads may not own and operate interstate trucking lines or international ships ping lines. Through this situation the railroads cannot compete with trucking lines on short, interstate haul-because of the speed and service factor and they cannot participate, excepting to a limited degree, in international hauling at all. Contrast the position of the Canadian railroads: they may operate trucking lines and steamship lines as well, hence, a Canadian shipper can ship his good to Timbuctu with a single set of shipping documents.

Given legal approval, however, it is within the power of the railroads to increase the earnings of the trucking companies and their own earnings as well, if they were permitted to convert railroad rights of way into toll-truck highways, which would enable them to participate in trucking earnings and at the same time take most of the trucks off the highways.

Consider this: the railroads of America own tens of thousands of miles of *abandoned* rights of way which are growing up in brush. These rights of way are graded, heavy-duty roads, far better than the average highway,

One Press . . . Four Days . . . 6,000,000 Tablets





Nysco Laboratories, Inc., Long Island City, N. Y., was recently faced with an emergency order for 6,000,000 ferrous sulfate tablets. Only one of its eight Stokes Model BB-2 tabletting presses could be spared for the job . . . yet the press produced the prescribed quantity in just four days . . . without interrupting regular production schedules.

Usual output at Nysco Laboratories, Inc. is around 20,000,000 standard preparation tablets per week, produced from a stock of over 170 sets of Stokes punches and dies. Over 3,000 different preparations are made by this private formula manufacturer for the Armed Services, hospitals, wholesalers and exporters.

Stokes has the right machines and proved techniques for practical and profitable tabletting manufacture. Easily adjusted or adapted for different tablet sizes, shapes, pressures and speeds, Stokes tabletting presses can be operated at low cost, high output, and maximum efficiency.

Pharmaceutical manufacturers may consult with the Stokes Advisory Service and Stokes field engineers, without obligation, on such problems as tablet formulae, punch and die design, and improved manufacturing and operating procedures.

Send for Catalog No. 800 "Stokes Tabletting Presses", which pictures and describes tabletting processes, and for Catalog No. 600, "Stokes Pharmaceutical Equipment", which describes the complete line of Stokes pharmaceutical machinery now available.

F. J. Stokes Machine Company
Philadelphia 20, Pa.

STOKES

STOKES MAKES: High Vacuum Equipment, Vacuum Pumps and Gages/Industrial Tabletting, Powder Metal and Plastics Molding Presses/Pharmaceutical Equipment

having a maximum of two or three per cent grade. If these rights of way could be utilized as toll truck highways, the trucking lines could save far more in gasoline alone than would be necessary to pay tolls, not to mention increased operating speed and minimization of wear and tear on their equipment.

Not only could the abandoned roads be used but *all* rail lines could be used with suitable paving between rails, so that the railroads could be utilized without difficulty by both trains and trucks. And flexible paving for this purpose has already been developed. From a trucking operator's standpoint the use of the railroad rights of way would have these advantages: almost continuous operation, absence of grades, the use of an established safety control and signal system. The railroads would benefit by a cut in trucking revenues through a toll system, which actually would cost the trucking companies nothing. This would be all the more true if the railroads were permitted to operate their own trucking companies.

The public would benefit by faster and possibly cheaper service and the damn trucks would be taken off our roads to a substantial extent.

When I discussed this plan with one of the directors of a national railroad, do you know what he said? He said, "From an engineering standpoint there is no doubt the idea could be worked out practically. The rights of way and the grades exist and the necessary between-track paving presents no insoluble problem. The laws of course are something else again. But if we permitted the trucking lines to use our rights-of-way even on a toll basis, the bastards in no time at all would have truck trains that would run us out of business!"

The last statement, gentlemen, explains much about the mentality of railroad management. (And the ultimate safety of the investments of widows and orphans whom their publicists talk so much about.)

Mene, Mene, Tekel, Upharsin!

Pharmaceutical manufacturers have taken all too lightly the efforts of some members of the industry to promote and subsidize technical education for the future benefit of the industry. Most of you applaud the efforts of these far-visioned members of the industry, but what the hell is the good of your applause when you haven't paid for your ticket?

The technical situation as it exists in the industry has gone beyond the critical stage. Everywhere throughout the industry there exists a very serious shortage of well trained, not to mention experienced, scientists. Where can one get really capable pharmaceutical chemists, bio-chemists, pharmacologists, physicists, engineers—chemical or pharmaceutical?

If you know, for God's sake let me know in a hurry, for I can place a lot of competent men but the only ones I know are employed by present and previous clients and I can't ethically approach any of them directly or indirectly.

I predict within three years the damndest internecine battle for qualified scientists that ever rocked this industry as the demand for qualified men intensifies and managements flaunt the so-called "ethics" of the trade associations and begin by every fair or foul means to lure scientists away from their friends or competitors.

Several years ago when I advocated sending bright but impecunious young men in your own organizations to college, not only as a magnificent gesture in employee relations, but as sound, practical insurance against future need, the suggestion was treated in many quarters as being too idealistic to bear discussion. When I advocated the establishment of separate training and separate degrees in pharmaceutical engineering, the pharmaceutical schools, almost without exception, favored the idea and would have established the courses if they had been given the moral and financial support—of you, the manufacturers. You gave them moral support but no dough.

Now I would defy any manufacturer to find within six months at any price six really qualified pharmaceutical engineers (meaning, unfortunately, engineers with pharmaceutical experience only) unless he swiped them from other firms in the industry.

Yet, everywhere in the industry manufacturers who employ ten scientists in research and related activities are talking about building up to twenty as soon as they can get the men. Those who have twenty are talking about the need for fifty. Those who have fifty are talking about increasing staffs to a hundred.

Just where are all these scientists to come from?

In the past the pool of science was formed haphazardly from students and from government or university men who wished to get into industry. The bottom of that barrel has been scraped so dry that holes have been worn in it.

Time was when you could depend upon picking up scientists at random. Time was when a research director needed only to be a graduate of a run-of-the-mill pharmacy school. All that has changed. Who would have thought in the pharmaceutical industry fifteen years ago that a physical chemist or a physicist had a place in pharmaceutical research? That was before isotopes. How many people in the industry then could even give a definition of electro-chemistry? Or even bio-chemistry?

This industry is becoming one which is based upon a multitude of complex sciences and it can no longer depend upon luck or catch-as-catch-can tactics in developing its research staffs particularly.

The industry should initiate and support with millions of dollars (all of which would be tax deductible) a nationwide educational program for its own benefit—and ultimate salvation.

Be Salt

"From the battle against the police state, Bishop Berggrav went on to take up arms against the welfare state.

"The slogan is: 'The welfare state takes care of all problems arising in the life of its citizens down to tooth-

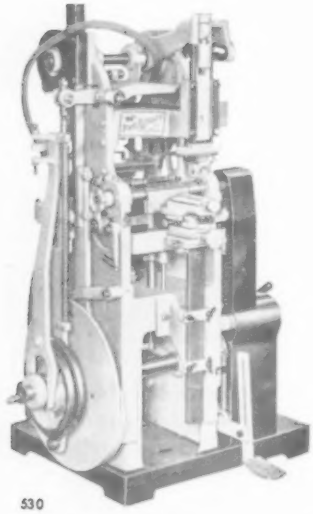
HOW? By utilizing *vacuum* in a critical stage of your packaging.

All the care lavished on selecting appropriate containers, perfect closures and attractive labels for carefully made products,— the components that reflect Quality, can be nullified by neglecting precision labeling.

When your product meets the eye of the buyer, *every* label should be exactly in its proper position,—in intimate *permanent* contact with its container. This is *mechanically assured* by use of vacuum to do the label-handling, guaranteeing positive label-feeding, uniform adhesion and accurate label placement.

To do this, you need a PONY LABELRITE®

Why not ask for proof?



530

NEW JERSEY MACHINE *Corporation*

AUTOMATIC LABELING • PACKAGING — PAPER BOX MACHINERY • MAKERS OF THE PONY LABELRITE

FACTORY SALES AND SERVICE BRANCHES
325 W. HURON ST., CHICAGO 10, ILL.
1701 CAREW TOWER, CINCINNATI 2, OHIO
2500 W. 6TH ST., LOS ANGELES 5, CAL.

MAIN OFFICE & FACTORY: 1520 WILLOW AVENUE, HOBOKEN, N. J.

aches and bath water.' The state we see today attempts to take the place of God by substituting welfare for faith and God. Here is a state [Russia] that, even when it cloaks itself in the garments of democracy, is blasphemous. It assumes for itself the rights of God and is therefore our mortal enemy. It need not develop in this direction provided the church and individual Christians exert a positive and helpful influence.'; Bishop Berggrav's prescription: "Be a *leaven*, be a salt' if need be, *a dangerous salt*."

Bishop Lilje—Time 8-11-52

Faith

"In the United States I breathe freely, and on analyzing this impression, I find myself in profound accord with the political thought and the institutions of this nation. To use a great word that sums up everything, for the first time in my life I breathe in a climate of legitimacy. Here, it is evident that democracy is legitimate, that is, it springs from an undefiled source. For a Frenchman, it is an immense surprise and a deliverance to feel so.

"Americans are changing their myths. They no longer believe in American omnipotence, nor in the absolute inviolability of their territory and their way of life. Politically America has just arrived at maturity—that is, at a state of awareness of personal risk. Korea has killed the myth of the happy ending. . . .

"America—and France, too—is completely the contrary of a nation of prey. Nothing is more foreign to her character than the maxim of every tyranny since the world began: 'Hate me if you will, provided that you fear me.' America is wretched over the necessity for making herself feared, and she cannot bear to be hated. Her great errors have always been in the realm of the emotions.

"This nation is Christian. It is the religious domain that we can see most clearly that America does not make a part of the 'modern world.' The great Annunciation of this modern world, of which Nietzsche was the herald, 'God is dead,' has missed America. One has the impression that it did not reach this far. Or if it is noticed, it is not understood. It has no grip on this nation. This nation is pious. Perhaps it is necessary to be 10 centuries old in order to feel and live atheism as certain Europeans feel and live it."

Father Bruckberger—Time 8-11-52

The following information is supplied by manufacturers of the equipment described and claims made below by these manufacturers are passed along for what they are worth. Presentation of such notice in this department is not to be taken as endorsement of the claims or of the equipment.

Coating Machine

Adopting an improved principle of coating application, the POTDEVIN MACHINE CO., 285 North Street, Teterboro, N. J., has developed a smooth running ductor-roller type coating machine. This new design, referred to as the 2R series, assures overall precision coating of glue, lacquer, varnish, resins, latexa or other liquid solutions. The uncoated surface remains perfectly clean.

Of particular value is the simple and quick removal of the coating tank and rollers for cleaning. A non-clogging coating control regulates the correct amount of coating for all type of work. Coating solutions requiring heat are kept at proper temperatures with a thermostatic control. All parts in contact with coating material are made of stainless steel. Four sizes are in the line, 6, 9, 12 and 15 inches, each supplied with heavy duty motors.

Aerosol Valve

A new dispensing valve recently introduced by the Valve Division, The Risdon Manufacturing Company of Naugatuck, Conn., has design features which may make possible new pressurized products, lower costs, new package styling and improved spray performance.

Included in these features are a flexible metal diaphragm and valve seat, made of nylon or teflon. This permits the use of all standard propellents plus such high solvency propellents as "Freon-21", "Freon-22" and lower cost methylene chloride. It is expected that this feature may make feasible the aerosol-packaging of new, heretofore "impossible" products.

The surface and cap of the Risdon valve present a streamlined, all-metal appearance. This contributes a quality look which the package designer should find easy to integrate into his package styling. The valve's finished, precision lines should enhance the consumer eye appeal of many aerosol packages. Protective overcaps are available in lithographed colors and designs to customer's specifications.

The valve produces a soft spray-cloud of extremely minute and uniform particles especially desirable for products such as room deodorants, colognes, hair lacquers, etc. When required, a slightly modified model can be supplied to give a heavy, wet spray.

An important construction feature, the proximity of the secondary orifice to the terminal orifice, minimizes possibility of clogging due to internal drying.

A quick, positive cut-off minimizes wasteful, messy nozzle drip. The position of the actuating lever makes spray direction immediately obvious, preventing accidental misdirection of the spray.

Free operating samples of the Risdon valve on an actual loaded dispenser are available when request is made, upon company letterhead, to Valve Division, The Risdon Manufacturing Co., Naugatuck, Conn.

Micro Centrifuge

A new micro centrifuge that operates up to 23,000 RPM is now available for microchemical and clinical testings. Measuring only 7½" high and 6½" in diameter, this sturdy, precision-made centrifuge accomplishes work ordinarily requiring a larger centrifuge. Unit holds 8 tubes with capacities up to 1 ml. Tubes

AGAIN the choice is US

1943 Sterling Drug Inc. Installs *US* Model JK For Filling ZBT Baby Powder Cans in New Jersey Plant

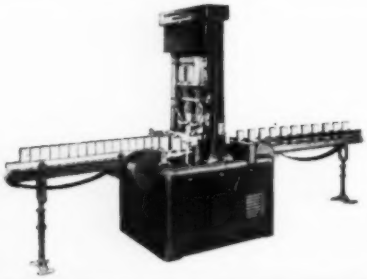
1952 Sterling Drug Mfg. Ltd. Installs Model JK For Same Operation in Ontario, Canada Plant

Sterling Drug Inc., manufacturers of ZBT baby powder, have used U. S. Automatic powder filling machines in their domestic plants for several years. Now they are using a U. S. Automatic Model JK automatic powder filling machine in their Sterling Drug Mfg. Plant at Windsor, Ontario.

The Model JK is a versatile twin station machine that fills with closest accuracy up to 60 containers per minute on all types of powdered and granular materials. Normally the operation of this automatic machine is to fill by packing under controlled pressure; for those materials that require settling a vibrating filling platform is furnished.

Machine operators praise the efficient dust collector hoods at the filling stations and the shut-off gates that eliminate drip at the augers. Connected to a vacuum system these keep the surrounding air free of dust and make the filling operation absolutely clean.

Add to these features, ease of change-over to handle several sizes of containers and you have a machine that is the last word in modern-high-speed powder filling. Write ***US*** for complete details.



the Model JK Fully Automatic Volume Filler, Weigher or Packer.

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are placed opposite each other with no precision balancing required. Powerstat is available for controlling speed up to 23,000 RPM. Operates quietly and economically from any 110 A.C. outlet. Manufactured by Microchemical Specialties Co., 1834 University Avenue, Berkeley 3, Calif.

Portable Gear Head Mixer

Standard Electric Mfg. Co. Inc., West Berlin, N. J., has recently developed a new portable 1/3 hp gear head mixer specially designed for mixing either more viscous liquids or larger quantities of less viscous liquids. A ¾" diameter 48" long stainless steel shaft is removable and interchangeable with other size shafts to fit individual requirements. In addition, the two 7" stainless steel deep pitch propellers, furnished as standard equipment, can be replaced with 8", 10" or 12" cast iron or aluminum propellers which are available on special order. The adjustable clamp permits adjustment of the mixer to any angle and to any shape tank.

The Standard Electric Gear Head Mixer is equipped with a G.E. motor rated at 1750 rpm. Propeller speed is 432 rpm obained through the special Standard Electric Gear Head adapter. All ball bearing mounted, the mixer is designed to withstand rotating loads preventing shaft whip. Dual voltage of 110 or 220 volts is another added feature.

For additional information, write Standard Electric Mfg. Co., Inc., West Berlin, N. J.

Case Stapler

International Staple & Machine Co., 801 East Herrin Street, Herrin, Illinois, announces the "Staple King," a new production model in its line of retractable anvil stapling machines. The equipment is designed for simultaneous closing of tops and bottoms of center slotted cartons and partial or full overlap cartons . . . either corrugated or fibre, at the rate of more than 350 an hour.

The patented retractable anvil feature of the stapler permits closure from the outside, after cartons are filled with merchandise, products or materials.

Air operated, the machine is semi-automatic, and stapling heads function when operator touches a foot pedal. A carton guide assists in properly positioning cartons for stapling. This guide may be adjusted to accommodate different production runs involving a quantity of cartons of a different size.

A special setting permits concealed stapling. When so adjusted, the staples penetrate approximately two-thirds of the way through the carton wall and are clinched.

A roller table guides cartons toward stapling heads. This table is adjustable to the exact height of your existing conveyor system. The "Staple King" automatically accommodates cartons that vary in height up to 5*N*". A two-second adjustment sets machine when variance is greater than 5½".

In addition to standard air filters, lubricators and regulators, the unit is equipped with warning lights that automatically flash when staple supply is low.

According to the manufacturer, cartons closed with retractable anvil stapling machines are pilfer-proof inasmuch as it is impossible to remove and replace staples without it showing. Another advantage is that staples neither hide or mar ad copy, product illustrations, labels or addresses appearing on outside carton walls.

The company also states that stapled closures are not affected by changes in thermal or humidity conditions due to weather, refrigeration, excessive moisture or excessive heat.

Typical uses of the "Staple King" . . . for packaging metal products, electrical appliances, and fresh foods.

Bag Counter

A new stacker-counter-sorter attachment for Polyethylene bag making machines is the latest refinement in automatic bag making to be announced by Simplex Packaging Machinery, Inc., Oakland, Calif. The sacker-counter-sorter now makes it possible for one operator to supervise several bag making machines. It consists of a movable stacker, and a conveyor belt on which groups of 10, 25 or 50 polyethylene bags are sorted in stacks. A metering device keeps accurate count of the number of individual bags as well as the total number of stacked units.

The stacker-counter-sorter device is specially designed for attachment to the Model 4-7 Simplex Polyethylene Bag Making Machine. Simplex Packaging Machinery, Inc., Oakland, California, is a subsidiary of Food Machinery and Chemical Corporation.

High-Speed Automatic Jaw Sealing Machine

Automatic sealing and labeling of bags is the function of the new AMSCO Hi-Speed Automatic Jaw Sealing Machine with Vacuum Labeling Attachment. An operator places the filled bag into position and touches a hand-trip starter plate with the back of her hand. The AMSCO folding bar automatically guides the bag top and label between the jaws simultaneously with the automatic feeding of another label by vacuum labeling attachment. Labels with face widths from 3" to 7" is the range of sizes accommodated. Adjustments readily made in the feed magazine and chute section for different size labels within the above range. Labels can be folded flush back-to-back or shorter back and longer front for generous label design message.

There are two sealing jaws, each equipped with its own cartridge-type, hermetically sealed heating element. This provides maximum heat penetration to the inner sealing surfaces through label and both walls of the bag. Pressure is variable and controlled by spring-mounted movable top jaw, assuring perfect seal throughout width of seal.

Sealing heat is controlled automatically by a super-

sensitive dial type thermostat adjustable to the required uniform heat for the particular label and film being worked. A tri-pod type mounting permits angling of the sealing jaws for the most comfortable and efficient operating position. Because the bags are fed into the machine in a vertical or near vertical position there is no danger of spillage from the open end of the bags. Automatically labels and seals such heat sealable materials as cellophane, polyethylene, pliofilm, heat-sealable papers, glassines, and foils as well as plastic films. Dimensions are 34" high, 19" wide and 27" deep. Operates on 110 volts A.C. Other electrical specifications can be accommodated. Manufactured by Amsco Packaging Machinery, Inc., 31-31 48th Ave., Long Island City, New York.

Ultrasonic Emulsification

Much has been written and discussed in recent years about the practical application of Ultrasonics. A new machine based on the use of ultrasonic vibrations is now available and is of the greatest interest to all engaged in the making of emulsions or suspensions. This machine has been developed by Ultrasonics Ltd. of Bradford, England, and is now available through the Ultrasonics Company of 198 Pacific St., Newark, N. J. It is generally known that the process of emulsification has been fraught with great difficulties in the past and this revolutionary machine, which is the outcome of several years' research in producing ultrasonic waves effectively by mechanical means, can claim to provide the solution of these problems.

This machine known as the "RAPISONIC" (patents pending) is based on the principle of the Pohlmann Whistle. The vibrations are brought about by a jet of liquid impinging on a blade which vibrates at its natural frequency. Both jet form and blade are enclosed by a resonant bell, which concentrates the local ultrasonic effect.

Emulsification takes place when cavities are swept out by the blade which is oscillating at about 22 Kc—a frequency beyond the range of audition. On the collapse of these cavities instantaneous local pressures of the order of 30,000 lbs. per square inch are built up. This is the basis of the machine's efficiency. Although there is still some doubt as to what actually causes the dispersion, it is certain that the cavitation plays the main part and that other effects are secondary.

It is well known that in order to intermingle one normally insoluble fluid with another a high concentration of energy is needed. Generally the greater the amount of energy released on fluids the more intensive is the breaking down and consequently the smaller the particle size of the dispersion.

With Ultrasonics the great advantage is that the concentration of energy is terrific. Mechanical methods of producing Ultrasonics are concerned with sound strengths in the order of 1-2 watts/cm^2, and when one considers that this is several millions of times stronger than the sound from the average radio speaker, some idea of the energy concentration can be formed.

The limit of audition in air is a wave of approximately 2 cm. In liquids the figure is approximately 10 cm. Anything above this range is classed as ultrasonic and the wavelengths are correspondingly shorter. It is the shortwave feature of Ultrasonics which enables them to be easily directed, whereas with sonic frequencies only a comparatively small degree of direction is possible.

So fine are the emulsions obtained with this machine that in most cases the amount of emulsificant can be reduced, and in some left out altogether. This feature is particularly attractive where conventionally made emulsions contain an agent undesirable in the finished product.

The "RAPISONIC" has an output of 480 gals. per hour and has the additional advantage of being fully portable; it can be clamped on the side of existing mixing vessels. All parts in contact with the liquids are of stainless steel and other parts are made in light weight alloys wherever possible, to keep the power/weight ratio down to a minimum.

The frequency at which the blade vibrates can be easily adjusted, and the machine as a whole has been designed for utmost convenience of use and maintenance. The internal parts of the ultrasonic head can be dismantled by hand and cleaning is but a minute's work.

A final feature of the greatest importance to industry is that the "RAPISONIC" homogenizer, which has industrial applications as varied as the manufacture of chemicals, perfumes, essences and ice cream; the textile industry in its use of oils and the petroleum and oil industry generally, in the manufacture of confectionery and other food products, dairying and several other functions, costs in use only a fraction of other emulsifiers or homogenizers, although it is far ahead in efficiency.

Slip Labeler for Collapsible Tubes

A new labeling machine by Potdevin Machine Co., 285 North Street, Teterboro, N. J., applies 32 slip labels per minute to collapsible tubes. The machine automatically forms the label and ejects the label directly on the collapsible tube. The adhesive used is a resin hot melt kept at the correct temperature by a thermostatically controlled glue pot. The glue tank does not have to be cleaned each day. The adhesive remains in the tank overnight. Turn on the switch in the morning and in 10 minutes the unit is ready for operation. The labels are snugly applied to the tubes and can be slipped off when necessary. Machines are made for 1/8, ¼, ½ and one ounce tube sizes. Completely self-contained except for vacuum pump line for label pick-up. Hopper holds 500 labels.

Compactly built, measuring only 17½" x 15" x 9½". Stainless steel cover adds an attractive appearance to the unit and is easy to keep clean. The cover can be quickly removed to gain access to the working mechanism.

KEY TO NEW AEROSOL-DISPENSING POSSIBILITIES

Risdon DESIGN Opens the Door to NEW PRESSURIZED PRODUCTS-LOWER COSTS
The design of the new Risdon valve makes possible the use of a wider range of propellents. It can be used with all standard types plus such high solvency propellents as "Freon-21", "Freon-22", and high solvency—lower cost methylene chloride. This feature may make feasible the aerosol-packaging of new, heretofore "impossible" products.

Risdon APPEARANCE Opens the Door to NEW PACKAGE STYLING
Risdon's sleek, all-metal surface and cap have a "quality look" which will enhance present package appearance . . . inspire new package design. Its finished lines blend into the modern trend of package styling which emphasizes consumer eye appeal.

Risdon CONSTRUCTION Opens the Door to NEW SPRAY PERFORMANCE
The valve produces a soft spray-cloud of uniformly minute particles especially desirable for products such as room deodorants, colognes, hair lacquers, etc. This fine spray more than meets government specifications for insecticides. When required, slightly modified models can be supplied to give particle sizes of desired wetness.

The quick, positive cut-off minimizes wasteful, messy nozzle drip . . . insuring the kind of consumer reaction which builds repeat sales.

Position of actuating lever makes spray direction immediately obvious. No spray strikes the user.

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Investigations now being conducted indicate that **MODULAN** is hypo-allergenic.

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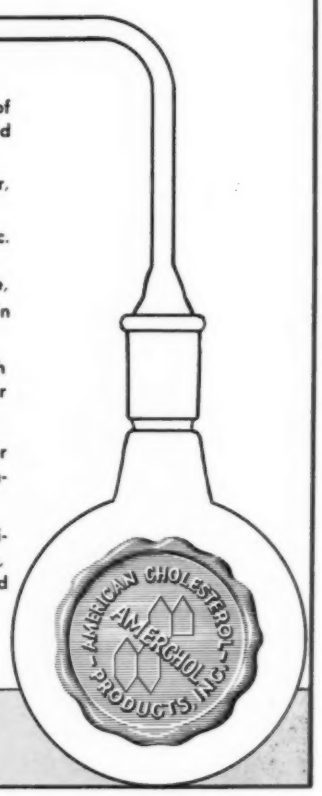
COMPATIBILITY— Because of its outstanding compatibility with oil-in-water emulsions and with soaps and shampoos, MODULAN can be used in high concentrations without affecting stability and foaming.

In addition to the above mentioned advantages, MODULAN deposits an emollient, protective film and is therefore highly effective in baby oils, hair dressings, soaps, shampoos, oil-in-water creams and lotions, lipstick, and other cosmetic and pharmaceutical products.

Detailed information available on request.



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Advancing Therapy

PABA in Brucellosis

Conceding that the four cases which he has studied do not permit the drawing of definite conclusions, D. L. Urschell (*Antibiot. & Chemother.* 2:551, 1952) calls attention to the potentialities of sodium para-aminobenzoate (PABA-sodium) in the treatment of acute brucellosis. In two patients the response to PABA-sodium was so prompt that it appears logical to consider the medication to be responsible, rather than a normal variability in the course of the disease. In a third patient the drug produced no such quick response, but when combined with intradermal brucellin led to a successful result. In only one of these four patients could no response of any kind be demonstrated. Urschell feels that from this work it appears that PABA-sodium has some anti-*Brucella* activity in clinically practicable dosage, and that it may well be used alone or in conjunction with other methods of therapy in the treatment of acute brucellosis. It would appear most logical to consider its combined use with antibiotics, either in early acute cases or in those which have failed to respond or have relapsed following therapy.

Terramycin in Burns

In the studies made by H. D. Ritchie and A. B. Wallace (*Antibiot. & Chemother.* 2:394, 1952), 50 consecutive patients with burns and scalds were treated with terramycin. In these the most extensive injuries involved 22 per cent of the body surface. In a few cases the burns were deep, but the majority were superficial in type. Blisters were snipped and the burnt area and surrounding skin cleaned with Cetrimide, 1 per cent. The burn was then washed with sterile 0.9 per cent saline and dried. No local powder of any kind was applied, and the burns were exposed to the air of the ward. Crusting occurred within the customary 48 hours, and the healing time was within normal limits for exposure. Positive bacteriologic reports were obtained in 71 per cent of the cases but in none of these did any local manifestation of infection develop.

Following a consideration of their findings, Ritchie and Wallace conclude that, as might be expected from the breadth of its bacterial spectrum, terramycin appears to be a more efficient prophylactic agent than penicillin in the treatment of burns and scalds. It is well tolerated by children, and bacteriostatic levels are reached in most cases. It has the advantage that it can be given orally. It would appear to be better tolerated by children than by adults.

Phenylbutazone in Rheumatoid Arthritis

In their report on the *Journal of the American Medical Association* (150: 1084, 1952), C. A. L. Stephens, Jr. and his colleagues state that a new drug, phenylbutazone (Butazolidin), was studied in 188 patients, of whom 147 had either rheumatoid arthritis or rheumatoid spondylitis. The average duration of treatment was 85 days; 36 patients were studied for 150 to 455 days. Phenylbutazone is not an innocuous drug. Toxic effects occurred in 44 per cent of the patients, consisting principally of lowered platelet counts, lowered hemoglobin levels, irritation of the gastrointestinal tract, hematuria, and skin rashes. Phenylbutazone appears to produce striking subjective improvement in a high percentage of cases of rheumatoid spondylitis and is less effective in peripheral rheumatoid arthritis. Objective improvement is less dramatic but is definite in a small percentage of cases. Whether this drug is truly antirheumatic or only analgesic in its action is not yet known. Phenylbutazone warrants further cautious trial and study.

In a British report on this drug, H. R. Davis and his associates (*Bril. Med. J.* 2:1392, 1952) state that they had given Butazolidin to more than 70 cases of rheumatoid arthritis. It has produced improvement which has been impressive and at times dramatic. In only two cases did it appear to be ineffective. The results of the controlled experiment are superior to those obtained with any form of therapy at their disposal, in particular in the relief of pain. It has proved remarkably effective in relieving the pain of osteoarthritis.

These results do not suggest that the drug is in any way curative. Continuation treatment has been necessary and return of symptoms has occurred at a variable period after withdrawal of the drug. This interval is usually three to seven days, but in one case was six weeks. No alteration in the sedimentation rate or hemoglobin level has been observed, and in those patients whose muscles showed wasting no increase in muscle bulk occurred. A longer period of observation is required to reach conclusions upon the effect of increased mobility of the patient on joints controlled by weak muscles.

In an addition to the original report, it is stated that the total series of cases treated with Butazolidin now exceeds 200 patients. The investigators are satisfied that the drug is of value in a wide range of painful states. These are confined to skeletal conditions. Relief from pain and increased functional activity have been obtained in ankylosing spondylitis, degenerative joint disease of the spine, and painful Paget's disease of bone. In psoriatic arthritis we have found the joint lesions to be relieved but the skin lesions to be unchanged. In rheumatic fever the drug is at least as effective as salicylate therapy.

Vitamin B_{12} in Viral Hepatitis

Three groups of 100 patients each with acute viral hepatitis were studied by R. E. Campbell and F. W. Pruitt (*Am. J. Med. Sci.* 224:247, 1952). Group 1 received the conventional treatment, consisting of a high-protein, high-carbohydrate, moderate-fat diet, bed rest, multivitamins, and brewer's yeast. Group 2 received the same diet and bed rest without added vitamins or brewer's yeast. Group 3 received the same treatment as group 2, but with the addition of 30 μg of vitamin B_{12} orally for the first five days of hospitalization. The patients who received vitamin B_{12} had a more rapid return to normal appetite and liver size than the patients in the other two groups. The total serum bilirubin values of all of the patients in the vitamin B_{12} group were

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normal after the 10th week of illness, whereas 18 weeks were required by group 2, and 24 weeks by group 1. The mean duration of illness, calculated from the date of the onset of the first symptom to the date the liver function tests became normal and remained so, was 48.7 days for the patients who received vitamin B_{12}, 54.4 days for those in group 2, and 56.7 for those in group 1. There were five instances of relapse in group 1, four such instances in group 2, and only two among the patients given vitamin B_{12}. Experimental work links vitamin B_{12} to nucleo-protein metabolism and hence to liver repair. Its role as a lipotropic agent is further evidence of its importance in liver diseases.

Surfactants Enhance Bacitracin Action

C. B. Bruce and L. Mitchell (*J.A.Ph.A.*, Scient. Ed. 41:654, 1952) have found that the antibacterial action of bacitracin is significantly and selectively affected by the presence of surface-active agents as determined by the paper-disk assay, using *Micrococcus flarus* as the test organism. Potency is enhanced by cationic and nonionic compounds and is decreased by anionic. This effect with benzethonium chloride can be shown in the case of other organisms, namely, *Staphylococcus aureus*, *Streptococcus pyogenes*, and *Neisseria catarrhalis*. Because of the potent antiseptic action of the quaternary ammonium agents, it is suggested that combinations of these with bacitracin may be well suited to the local treatment of infections where greater penetration of the tissue is desired.

Calcium Chloride Aerosol for Bronchitis

In a communication to the *Lancet* (2:1230, 1952), T. H. Howell points out that, in patients suffering from chronic bronchitis, wheezing is often a distressing symptom which may be hard to relieve. On the basis of previously reported observations, he decided to try calcium chloride aerosols for the treatment of this condition. Trials were made on 18 patients with chronic bronchitis and prominent wheezing. None had any expectorant mixture while under observation; and ephedrine, aminophylline, and other antispasmodics were not used during the experiment. The routine treatment was an inhalation of 3 cc. of a 10 per cent solution of calcium chloride in water three times a day. The fluid was vaporized by means of an oxygen cylinder. Only two of the patients failed to improve, and the remainder gradually lost their wheezing and dyspnea. On examining the chest, rhonchi and sibili were no longer heard. Most patients began to get relief after the first inhalation, and only one took as long as three days before his wheezing began to go.

As a result of this experiment, several patients with acute exacerbations of chronic bronchitis have been treated with inhalations of either penicillin or streptomycin dissolved in the calcium chloride solution. All responded promptly. There is at present no evidence to suggest that this technique cannot be repeated time after time without losing its effect. As the solution of calcium chloride is both cheap and easy to prepare, it seems to offer many advantages over other drugs in the treatment of wheezing.

Hydrazides of Isonicotinic Acid in TB

According to the report of I. J. Silikoff, E. H. Robitzek and G. G. Ornstem (*J.A.M.A.* 150:972, 1952) the hydrazides of isonicotinic acid, iproniazid and isoniazid, have been demonstrated to exert an important therapeutic effect in human tuberculosis. Optimum daily dosage of iproniazid is four mg. per kilogram of body weight. Isoniazid has been successfully utilized at four to eight mg. per kilogram, but incomplete experience has not eliminated the possibility of higher and more effective dosage levels. Satisfactory 24-hour blood concentrations may be maintained with both drugs administered in three or four divided daily doses. This administration schedule provides superior acute and short-term therapeutic effect. Whether it will be advisable or necessary for long-term therapy is undetermined.

Significant toxic side-effects, especially of the nervous system, occur infrequently at recommended dosage levels, but are more frequent and may be hazardous at higher levels. Such higher levels should not be employed, unless under close supervision, in selected cases for short periods of time. Laboratory evidence of toxicity has been infrequent or absent. Side-effects are commoner in elderly persons, in patients with unstable personalities, convulsive tendencies or a history of psychosis, and in the presence of anemia. Iproniazid therapy results in a greater incidence of, and more severe, toxic side-effects than isoniazid therapy. Prostigmime bromide is effective in alleviation of several of these side-effects. Adrenergic drugs and surgical anesthesia may aggravate iproniazid side-effects.

Therapy of pulmonary tuberculosis with iproniazid and isoniazid usually results in rapid control of systemic toxic manifestations, including elevation of temperature, anorexia, weight loss, and asthenia. Iproniazid is much more effective in this regard than isoniazid, which may even fail to completely control such toxic manifestations. Cough and expectoration are similarly affected and in many cases are eliminated. Therapeutic effect is observed in a wide variety of pulmonary and extrapulmonary lesions, including those of the larynx, tongue, gastrointestinal tract, bone, bladder, lymph nodes, pleura, skin, and tuberculous sinus tracts and wounds.

In England, C. L. Joiner and his colleagues (*Lancet* 2:843, 1952) present additional data on the use of isoniazid in pulmonary tuberculosis. They found that isoniazid alone has a beneficial effect on certain cases of pulmonary tuberculosis in the first three to six weeks of treatment. In the next few weeks the initial improvement is no longer maintained; and soon deterioration ensues, especially at first in the sputum-counts. This deterioration is associated with the excretion of resistant strains of tubercle bacilli in the sputum.

Combined therapy with isoniazid and streptomycin, on the other hand, gives a completely different picture when continued for a long enough period. There is the same initial improvement as in the patients treated with isoniazid alone; but the improvement is maintained until at the end of 18 weeks there is a great difference between the two groups. The initial rapid improvement in the sputum-counts, the gain in weight, and the fall in the erythrocyte-sedimentation rate all continue and there is paralleled improvement in the clinical condition.

These results suggest that the haphazard use of isoniazid alone in treatment of chronic pulmonary tuberculosis must be strongly condemned. There is a grave risk that the last state, of patients treated with isoniazid alone, may be worse than their first and that they will transmit isoniazid-resistant organisms to others. On the other hand there is no doubt at all that isoniazid, initially at least, hits the tubercle bacillus both *in vitro* and *in vivo* in a particularly vulnerable spot. It may be possible to find some modification of the molecule which will overcome its gravest disadvantage—the ease with which resistant strains develop.

Compounder's Corner

Cold Creams

In discussing the production of cold creams, N. S. Pell (*Soap, Perf. & Cosmetics* (25:615, 1952) stresses that there are certain points to be considered in the manufacture of stable, uniform, non-granular, reasonably inexpensive and commercially acceptable items. The following general formula allows plenty of scope for formulating a variety of cold creams of different degrees of hardness, lustre and other properties:

Beeswax	**7-20 per cent**
Borax	**0.51 " "**
Mineral oil	**20-64 " "**
Water	**40-50 " "**

In considering these basic ingredients, Pell observes that beeswax is highly functional in cold creams, because it incorporates in itself several constituents that favor the production of stable W/O emulsions. For this reason it is not easily replaced without a good deal of careful readjustment of formula. Beeswax with a lower acid value will obviously require less borax. A general rule is to use about 1 part of borax for every 14 or 16 parts of wax, but much depends upon the acid value of the wax and the presence of other material in any given formula.

Excessive use of borax is inadvisable, chiefly because both it and its by-product, boric acid, are only poorly soluble in water and will thus give rise to "grittiness" if allowed to crystallize out. Hence enough water must be present to take up any excess, or else a small quantity of glycerine should be included to enhance solubility. On the other hand, if too little borax is used, the emulsion may show various signs of instability and partial breakdown.

Sweet almond oil is capable of giving a fine, medium-soft cold cream. Other vegetable oils, such as tea seed, grape seed, peach kernel and so on, have also been used with success. In general, however, there is a marked preference shown for creams based on a good cosmetic grade of mineral oil.

Potential additives to cold creams are normally included to improve the gloss or lustre of the cream, or to modify its texture or consistency. In all cases it is essential to ensure that they do not adversely affect the stability of the emulsion. Among the commoner additives are hard and soft paraffins, to give additional "body" to the product; and traces of cetyl and stearyl alcohols, to modify texture. Ozokerite tends to give a harder film on the skin, whereas the paraffins and spermaceti are capable of improving the thixotropic effect, enabling the cream to liquefy on the skin with slight pressure. Spermaceti also assists in the production of a high gloss.

Pell notes that cold creams, as a class, are not subject to mould growth but there are formulae, of course, in which suitable preservatives should be included.

The method of manufacture is also of importance. Careful attention should be paid to mixing and filling temperatures, and particularly to their standardization once a suitable procedure has been worked out and adopted. In the processing of a typical cold cream the beeswax and any other waxes, etc., are, for example, melted in a jacketed kettle, filtered, and then run into a mixer containing the mineral oil, the temperature being held at 65° C. The borax and other water-solubles are separately added to the water batch which, at a temperature of 70° C., is run through a filter into the mixer. Medium-speed stirring is carried on for 15 to 20 minutes (longer, in the case of certain modified cold creams); perfume is added at 45° C., and slow-speed stirring continued for another fifteen minutes or until the cream is ready to be filled into the containers. The aqueous batch is added in a thin stream. If desired, the cream may be filled cold—left overnight and re-mixed prior to filling. With some formulae this tends to give a softer cream. Homogenization, though satisfactory for the majority of cleansing creams, is not to be recommended for cold creams, as it adversely affects the colloidal structure and often results in an emulsion that lacks rigidity and will not set.

The following formulae are offered by Pell as useful bases for further experimentation and standardization:

I

Beeswax, white	**12.0 parts**
Cetyl alcohol	**1.5 "**
Mineral oil	**54.0 parts**
Perfume oil	**0.5 part**
Borax	**1.0 "**
Distilled water	**31.0 parts**

II

Beeswax, white	**12.0 parts**
Paraffin, white soft	**12.0 "**
Almond oil	**50.0 "**
Borax	**1.0 part**
Rose oil	**sufficient**
Rose water	**25.0 parts**

The following formula, which is capable of producing good results, contains a little glycerine to improve the solubilization of traces of free borax and boric acid:

Beeswax, white	**12.0 parts**
Mineral oil	**46.0 "**
Paraffin wax	**2.5 "**
Petroleum jelly	**3.0 "**
Borax	**1.0 part**
Glycerine	**1.0 "**
Perfume oil	**0.5 "**
Water	**34.0 parts**

Illustrating the use of isopropyl myristate as a partial replacement for mineral oil, giving a less oily film on the skin, the following formula also contains a little lanolin as an extra emollient:

Beeswax, white	**12.0 parts**
Isopropyl myristate	**20.0 "**
Mineral oil	**25.0 "**
Paraffin wax	**5.0 "**
Petroleum jelly	**10.0 "**
Lanolin	**2.0 "**
Borax	**1.0 part**
Preservative and perfume	**sufficient**
Water	**25.0 parts**

Hair Coloring Cream

British patent 671,122, as cited in *Soap, Perfumery & Cosmetics* (25:1067, 1952), describes a stable, cream-like hair dye comprising an intimate mixture of a cosmetic cream as vehicle, a vegetable or artificial dye which is capable of directly dyeing the hair without any supplementary oxidizing reaction, a wetting agent which causes the hair to swell and makes it permeable to the dye and an electrolyte to give a *p*H corresponding to an optimum efficiency of the dyeing agent in the mixture. The following formula, in which the function

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of the ingredients is indicated, provides an example of such a hair-tinting cream:

Emulsifiable glycol stearate (as emulsifying agent)	**10.00 per cent**
Sulphonated lauryl alcohol (as wetting agent)	**1.00 " "**
Rhodamine (as dyeing agent)	**4.00 " "**
Cholesterol and lecithin (as treatment substances)	**20.0 " "**
Ammonia 22° Be (20% solution)	**5.00 " "**
Perfume	**0.50 " "**
Water	**79.30 " "**

Such a dyeing cream is claimed to enable the dye to be transferred easily to the hair, as the dyeing agent is partially, or wholly, dissolved or dispersed in the cream, which is brought in close contact with the hair to be dyed. Such dyeing creams enable strong shades to be obtained which are resistant to any shampooing. When the hair has been dyed, the cream carrying the dyeing agent is washed away by merely washing or shampooing and the hair keeps its brilliancy and flexibility.

Absorption through Skin

The effect of wool fat and some of its constituents on the absorption of phenolphthalein through the intact skin has been determined by V. N. Bhatia and L. C. Zopf (*J.A.Ph.A.*, Scient. Ed. 41:541, 1952). The absorption studies were carried out on fifty 150-Gm. albino rats, which were divided into 10 groups of five animals each. Petrolatum U. S. P. and polyethylene glycol ointment U. S. P. XIV were used as the two ointment bases, the former representing the oleaginous type of bases and the latter the hydrophilic type. Phenolsulphonphthalein in a concentration of five per cent was used as the tracer, as this dye is rapidly excreted unchanged in the urine and is readily detected.

The following substances were incorporated in concentrations of five per cent and 10 per cent in the ointment of phenolsulfonphthalein prepared with each of the two bases: wool fat, cholesterol, isocholesterol, aliphatic alcohols from wool fat, residue from wool fat, cholesteryl stearate, cholesteryl palmitate, and cholesteryl acetate. Each substance was tested on two groups of animals; the material under investigation being applied to exposed skin areas. The animals were placed in separate cages and their urine was collected over a period of 24 hours. The urine specimens thus collected were diluted to one liter and centrifuged. A solution of sodium hydroxide (five per cent) was added drop by drop to the diluted urine samples until the maximum pink color was developed. The intensity of the pink color produced by the interaction of the alkali and the dye was measured on a photoelectric colorimeter.

From these data, Bhatia and Zopf found that wool fat and its fractions, as well as the esters tested, enhanced the absorption of phenolsulphonphthalein from petrolatum and from polyethylene glycol ointment. However, the increase in absorption caused by the cholesteryl esters, aliphatic alcohols, and residue was not large enough to be of any practical importance. When combined with polyethylene glycol ointment, the substances tested should be used in a concentration of 10 per cent since at the lower concentration they do not fully manifest their individual effects.

It was also observed that the use of cholesterol does not offer any advantage over the use of wool fat. There was no significant difference in their results. Moreover, polyethylene glycol ointment definitely is a better agent than petrolatum for causing the absorption of phenolsulfonphthalein. No absorption could be detected from petrolatum in a 24-hour period under the experimental conditions of this study.

Stable Calamine Lotion

Because the present U. S. P. calamine lotion is not a satisfactory vehicle for phenol, G. L. Stanko and H. G. De Kay (*Am. J. Pharm.* 124:328, 1952) prepared and tested other formula for calamine lotion in an attempt to solve this incompatibility. A preparation containing a combination of Veegum (R. T. Vanderbilt Co., New York, N. Y.) and sodium alginate, with Tween 80 (Atlas Powder Co., Wilmington, Del.) as a wetting agent, proved satisfactory; the recommended formula being as follows:

Calamine	**8.0 per cent**
Zinc oxide	**8.0 " "**
Glycerine	**2.0 " "**
Tween 80	**0.5 " "**
Sodium alginate, two per cent	**5.0 " "**
Veegum magma, five per cent	**75.0 " "**
Water, to make	**100.0 " "**

This lotion was found to be stable to phenol, resorcinol, camphor and menthol, and benzocaine. It wets the skin readily and smoothly and dries to form a slight film, but is easily removed with water.

Antioxidants for Carotene

In the comparative studies made by E. M. Bickoff, A. L. Livingston, J. Guggolz, and C. R. Thompson (*J. Am. Oil Chem. Soc.* 29:445, 1952), a variety of compounds were evaluated as antioxidants for carotene in mineral oil solution by an accelerated stability test. These included derivatives of aromatic amines, substituted dihydroquinolines, ureas, phenothiazine, azobenzene, and diphenylmethane. The most effective antioxidants were hydroxy- and amino-substituted diphenylamines, p-substituted phenylenediamines, and derivatives of 2,2,4-trimethyl-1, 2-dihydroquinoline.

Cleansing Creams

British patent 675,152, granted to the Procter & Gamble Co., provides specifications for making oily cosmetic cleansing creams which are readily removed from the skin by the use of water alone. The procedures given in the patent are said to provide cleansing creams which will have cleansing, lubricating, softening and skin conditioning properties, but which will be non-irritating to the skin, pleasing in appearance and which will form a thin, transparent and substantially colorless oily film when rubbed on the skin. Such a cream will, after removal, leave the skin feeling soft but not oily or greasy. It can also be easily removed from the skin with apparent lather formation by rubbing with water alone, thus avoiding the drying effect and the skin irritation sometimes caused by soap and the general ineffectiveness of removal by a cloth or a cleansing tissue. In order to provide a cream of the desired qualities a plurality of ingredients are necessary, each employed because of its effect on the finished cream. A cream illustrative of this invention has the following formula:

Mineral Oil	**40.0 parts**
Petrolatum	**25.0 "**
Octadecanol	**25.0 "**
Lanolin	**2.0 "**
Emulsifier	**5.0 "**
Ethylene Glycol	**1.5 "**
Water	**0.5 part**
Titanium Dioxide	**0.5 "**
Perfume	**0.2 "**

Such creams are said to be homogeneous in appearance, of good texture, to wash off readily and smoothly with water alone and to maintain their plastic, creamy consistency at 60 to 100° F.

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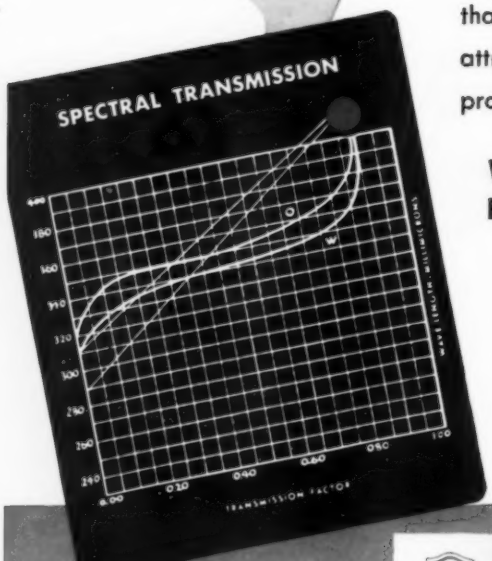

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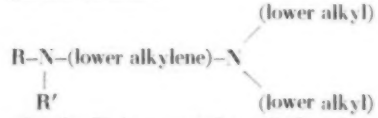
Patent Thoughts and Trends

*by Thomas Cifelli, Jr.**
PATENT ATTORNEY

PATENTS BEGET PATENTS

The thought underlying this title was engendered by U. S. Patent 2,626,262, issued to Mathieson Chemical Corporation on an invention of W. A. Lott and E. Pribyl.

Their invention deals with compounds of the class consisting of bases of a general formula:



wherein R is a member of the class consisting of hexadienyl,2,4 and 3-chloro-hexadienyl,2,4, and R′ is a member of the class consisting of phenyl and 2-pyridyl groups; and acid-addition salts thereof.

The compounds of the Lott and Pribyl patent are said to be valuable histamine-antagonizing agents, being therapeutically effective in the treatment of nasal allergies, urticaria, angioneurotic edema, serum sickness, and reactions from penicillin, streptomycin, sulfonamides and other drugs, and being more potent and/or less toxic than the prior compounds not embodying the alkadienyl or haloalkadienyl groups.

The reason why this patent is being singled out herein is tied up with the use of the compounds in question in the treatment of reactions from penicillin, streptomycin, sulfonamides and other drugs. The point which I wish to make is that, so far as these particular uses are concerned, they did not exist prior to the discovery of the drugs in question. In other words, if it had not been for development of these drugs there would not have been, chances are, any incentive to develop the Lott and Pribyl compounds.

Nor is this phenomenon of one success creating a problem to be solved and hence creating a success for some future date, peculiar to the drug and cosmetic industry. We all know that automobiles could not utilize the better gasolines that the oil industry developed until metallurgical engineers developed high compression engines which could stand the gas. Even so, such engines and such gasoline would have been of little use if the rubber industry had not developed tires which were reasonably safe. Since it is not enough to start an automobile it was necessary to develop good brakes so that cars could be brought to a stop within a reasonable distance.

Examples from different industries could be cited ad nauseum.

The foregoing considerations lead to the following question: Is the successful progressive research organization—or industry—the one which has practically no problems to solve, or is it the one which always seems to have more problems than it can handle, even though in the latter case its research personnel may have been increased many-fold?

Patented Cosmetics and Toilet Preparations—II

In last month's article the expired U. S. patents dealing with cosmetic and toilet preparations in general were abstracted.

We now turn our attention to a consideration of the unexpired patents in this category.

Unexpired Patents

U. S. 2,041,158—Cuticle Remover and Process of Removing Cuticle-issued November 21, 1935, to Dagfinn G. Thuesen, Bloomfield, N. J., assignor to The Egyptian Lacquer Manufacturing Company, New York, N. Y., a corporation of New Jersey.

The disadvantages flowing from the use of caustic alkalis as cuticle removers are avoided by using low molecular acid amides. Foramide is said to be the most active amide and the activity of these compounds is said to decrease with increase of molecular weight. In actual practice aqueous solutions from about 40 to 60 per cent by weight are suggested.

Claim 5 gives an idea of the process of application:

> In the removal of cuticle, the process which comprises softening the cuticle in hot water, applying thereto an amide of a low-molecular aliphatic acid, and removing the cuticle.

Claim 1 indicates breadth of protection received:

> As a new cuticle remover, an amide of the low-molecular aliphatic acids.

U. S. 2,134,494—Face Paint Base—issued March 9, 1935, to Helene Winterstein, nee Vierthaler, Vienna, Austria.

In order to overcome smudging which accompanies the use of face paint bases this patent suggests the use of a volatile solvent for the waxes employed, the solvent being oil of turpentine.

Claim 2 gives an idea of a composition suggested as being suitable, as well as an idea of the scope of protection:

> A cosmetic paint for eyebrows and eyelashes consisting of an emulsion of five parts of unsaponified wax with three to ten parts of water, one to sixteen parts of oil of turpentine, a pigment, a perfume and an emulsifier selected from the class consisting of borax and potash for the wax, said oil of turpentine being volatile at ordinary temperatures and serving to rapidly dry the said emulsion when the latter has been exposed after being applied to the eyebrows and eyelashes.

U. S. 2,152,658—Method of Inhibiting the Alkaline Corrosion of Tin Containers—issued December 9, 1936, to Anthony C. Nitti, Brooklyn, N. Y., assignor to E. R. Squibb & Sons, New York, N. Y., a corporation of New York.

Since many cosmetics are somewhat alkaline and are packed in tin containers the problem of corrosion of the containers and consequently alteration of the preparation is a real one. The addition of certain chemical agents and the use of certain mechanical expedients have helped but according to this patent these are not the answer as the desired results were either not achieved or troublesome contaminating substances were introduced into the picture.

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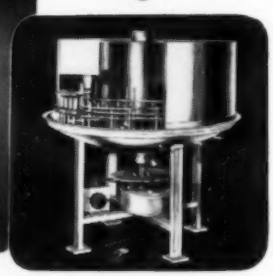

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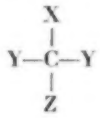
The patent proposes to solve the problem by using solvents such as chloroform, carbon tetrachloride, iodoform, methylene dichloride, ethylidene dichloride, bromoform, carbon tetrabromide, methylene dibromide, ethylidene dibromide, carbon tetraiodide, methylene di-iodide, ethylidene diiodide, and methyl iodide.

A small proportion of these solvents is sufficient, one example given in the patent utilizing only one part of solvent for 3,000 parts of the preparation.

Claim 1 is illustrative:

> The method of minimizing interaction between a tin container and an alkaline preparation to be packed therein that comprises incorporating into the latter a compound having the general formula



> wherein X represents halogen, Y represents one of the group hydrogen and halogen, and Z represents one of the group hydrogen, halogen, and methyl, in amount sufficient to inhibit the alkaline corrosion of the tin container.

U. S. 2,152,659—Method of Inhibiting the Alkaline Corrosion of Tin Containers—issued December 9, 1936, to Anthony C. Nitti, Brooklyn, N. Y., assignor to E. R. Squibb & Sons, New York, N. Y.

This patent deals with the same problem treated in U. S. 2,152,658.

The solution here is to use an iodide of an element selected from the group consisting of alkali metals and the alkaline-earth metals, notably the iodides of potassium, sodium, calcium, and magnesium.

Claim 2 is illustrative:

> A package comprising a tin container having therein an alkaline preparation into which there has been incorporated an iodide of an element selected from the group consisting of the alkali metals and the alkaline-earth metals, in amount sufficient to inhibit the alkaline corrosion of the tin container.

U. S. 2,173,755—Nail Enamel—issued May 9, 1936, to Henry D. Fuller, Washington, D. C.

The idea here is to avoid the use of nitrocotton in nail enamels because of the objections to the compounding of nitrocotton enamels, these objections being based on the explosive and inflammable nature of nitrocotton.

Cellulose aceto butyrate or ethyl cellulose is dissolved in solvents such as ethylene dichloride and the resulting solution is added to a resinous solution to give the finished product.

A composition said to be very satisfactory is made up according to the following formula, the parts being by weight:

	Parts by weight
Cellulose aceto butyrate	10
Ethylene dichloride	25
Diethylene dioxide	40
Camphor	5
Hydrocarbon resin	5
Butyl acetate	10

Claim 3 is illustrative:

> A nail enamel comprising an organic ester of cellulose 10 parts dissolved in a solvent consisting of ethylene dichloride 25 parts and diethylene dioxide 40 parts.

U. S. 2,195,971—Fingernail Enamel Composition—issued July 8, 1937, to Richard C. Peter, Parlin, N. J., assignor to E. I. du Pont de Nemours & Company, Wilmington, Delaware.

The advantages which cellulose nitrate gives to fingernail enamel are retained and, at the same time, certain additional advantages are obtained if acrylic acid and acrylic acid ester resins are used in conjunction with cellulose nitrate.

Greater smoothness, flexibility and adhesion are obtained. The undesirable characteristic known as "bodying", which is a gradual thickening of the enamel by evaporation of the volatile ingredients, is avoided.

Claim 1 is illustrative:

> A fingernail enamel composition comprising cellulose nitrate, a plasticizer and a polymerized organic derivative of an acrylic acid selected from the group consisting of aliphatic and alicyclic esters of an acrylic acid.

U. S. 2,215,898—Nail Polish—issued January 14, 1938, to Robert J. Anderson, Bloomfield, N. J., assignor ro The Vorac Company, Newark, N. J.

The idea of this patent is to provide a nail polish which will permit the nails to "breathe." The thought behind this idea is to attempt to overcome the tendency of nail polishes to induce brittleness in the fingernail.

The objective is attained by employing ethyl cellulose in combination with nitro cellulose and adding a water soluble substance such as neutral synthetic soaps. After the dried film on the nail is placed in water some of this water soluble constituent is dissolved, thereby rendering the film impervious to air and moisture.

Sodium lauryl sulfate and diglycol stearate are especially recommended as desirable synthetic soaps.

Claim 1 gives an idea of the scope of protection.

> Liquid nail polish having a nitrocellulose base and containing an amount not greater than 5 per cent by weight of a substantially neutral water soluble organic solid material.

U. S. 2,230,063—Liquid Lip Rouge Preparation—issued January 23, 1939, to Milton Klimist, Chicago, Illinois, assignor to M. Martin Gordon, Chicago.

Innocuous, moisture-proof and smear-proof compositions which are readily and easily applied to the lips and which last for long periods are made by combining a coloring material which is preferably an oil-soluble or spirit-soluble organic dye, a volatile solvent for the dye, a film-forming material, and a plasticizer or softening agent which renders the film on the lips soft and flexible so that the continuity of the coating on the lips is substantially unaffected by the movements and actions to which the lips are normally subjected.

A formula for such a composition is said to be the following:

	Percent
Ethyl cellulose	3.1
Ethyl alcohol	68.4
Petroleum ether	20.0
Hydrogenated methyl abietate	7.5
Rhodamine	1.0

Claim 1 gives an idea of the protection obtained:

> A liquid lip rouge comprising an innocuous composition which, when applied to the lips, forms a moisture-proof, smear-proof coating, the ingredients constituting said lip rouge comprising a volatile organic solvent, coloring matter, a plasticizer, and a film forming material selected from the group consisting of resins, gums and cellulose ethers and esters, said ingredients being present in approximately the following proportions:

	Per Cent
Volatile organic solvent	65 to 95
Coloring matter	0.05 to 3
Plasticizer	3 to 15
Film-forming material	1 to 12

> the plasticizer being of a character and present in the composition in amounts sufficient to form a soft coating on the lips without cracking.

U. S. 2,255,341—Composition of Citrus Fruit Constituents and Boric Acid and Method For Making The

(*Continued on page 398*)

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Readers' Questions

SHAMPOO WITH LANOLIN: Please send me a formulation for a lanolin cream shampoo. Camden.

A shampoo containing lanolin can be made along the following lines:

Fatty alcohol sulfate (Duponol WA Paste)	**50**
Sodium stearate	**8**
Water	**41**
Lanolin	**1**

These ingredients are heated together with constant stirring to approximately 85° C. When the mixture is homogeneous it is cooled slowly with stirring. Perfume may be added while the shampoo is still molten (45° C.). This formula produces a thick white paste with a pearly appearance. The shampoo is stable to oven testing up to 45° C. In the process of manufacture, the pearliness will not develop until the system has reached equilibrium between the crystalline and non-crystalline phase. Generally it requires two to seven days for the development of pearliness.

RULINGS REGARDING COSMETICS: I am planning to enter the mail order cosmetic business, having just developed a new and novel night cream. So far, I have been unable to get any information regarding the legal aspects of such a venture and would appreciate it if you would answer the following questions:

1. *What city, state, and federal licenses and permits must I obtain?*
2. *If I state that my product contains vitamins must I put the potency on the label?*
3. *At what vitamin potency does my product cease to be a cosmetic (hence not subject to luxury tax) and become a pharmaceutical?*
4. *Even though my product contains standard ingredients of highest purity and is therefore safe for normal people, would you still recommend product liability insurance?*

Thanking you in advance for your courtesy. New York City.

You will have to register your product and its formula with the New York City Board of Health. As far as I know, this is not required in the State or Federal Government unless therapeutic claims are made for the product, in which case the Food & Drug Administration is to be contacted.

If you do not claim therapeutic or physiologic effects from the vitamin content in your product, it will not, as far as I know, be necessary to declare the amount. If however, you make therapeutic claims, your product automatically comes under the regulations of the Food & Drug Administration, in which case you will have to declare the ingredients of your product.

It is my suggestion that you obtain product liability insurance. Further information on the legal aspects and other questions pertaining to labeling and the like can be obtained from consultants in the field who specialize in this sort of work. These people charge fees for their service, but it is often a well worth while investment.

ACID VANISHING CREAM: We would like you to suggest a method for making a vanishing cream base with an acid pH. We wish to incorporate adrenaline tartrate 1:5000 to yield a product for use in the treatment of rheumatic troubles. Bombay.

I think a vanishing cream such as you wish could be made along the following lines:

Glycol distearate, pure	**14.0 parts**
Mineral oil	**3.0** "
Beeswax, white	**2.0** "
Ceresin	**1.0** "
Lanolin	**1.0** "
Sodium lauryl sulfate	**1.0** "
Pectin, citrus	**0.5** "
Citric acid	**2.0** "
Glycerine	**6.0** "
Distilled water	**69.5** "

COLOGNE STICKS: Several years ago you published an article about stick cologne. Can you supply me with a formula for making such a product because I have been unable to locate the issue in which the original article appeared. Hamburg.

One procedure for making a cologne stick is as follows:

Stearic acid	**45 parts**
Sodium carbonate	**5** "
Alcohol (95%)	**950** "
Eau de cologne essence	**sufficient**

Melt the stearic acid and add the sodium carbonate together with the alcohol to which the cologne essence has been previously dissolved. Bring the mixture to such a temperature that the stearic acid is completely saponified and keep the product at this temperature for about one hour. Next run the cologne while still liquid into the molds.

Perfumer's Shelf

Turpentine from Brazilian Pine

Petroleum ether fractionation of turpentine from Brazilian *Pinus maritima* by A. M. Pereira (*Anais focaldade farm. e odontol. Univ. Sao Paulo* 9:189, 1951) gave colorless crystals melting at 139 to 141°C, a specific rotation of —80° (in ethanol), and an acid value of 178. Steam distillation of the fresh leaves or twigs yielded 0.1 per cent of an oil with the following properties:

Specific gravity	**0.9749**
Index of refraction	**1.5322**
Specific rotation	**—15°**
Saponification value	**89**

Cinnamic Acid in Sugar Pine

The occurrence of cinnamic acid in sugar pine (*Pinus lambertiana*, Dougl.) has been reported by A. B. Anderson (*J. Am. Chem. Soc.* 74:6099, 1952). He notes that cinnamic acid (*trans*-isomer) is a common constituent of many plants and is the chief component of the oil of *Storax*. In addition to being in the free form, it is likewise found as esters in various plant oils and resins.

While investigating the distribution and amount of pinitol present in sugar pine heartwood, there was observed on occasions a sublimate in the form of small white crystalline flakes which would appear on the walls of the evaporating dish as the aqueous extract was being concentrated to a sirup. This substance melted at 131 to 133°C, was insoluble in cold water, dissolved readily in dilute sodium bicarbonate solution, took up bromine, decolorized potassium permanganate, and has been identified as *trans*-cinnamic acid. While this acid was found in various heartwood sections from the bole of the tree, the largest quantity was obtained from the stumpwood area (*i.e.*, 3.20 Gm. from 400 Gm. of heartwood). This is believed to be the first report of the isolation of cinnamic acid from pine wood.

Oil of Adenosma Capitata

In the investigations made by P. V. Nair, K. S. Madhaven Pillay and N. S. Varier (*Bull. Central Research Inst., Univ. Travancore.* Ser. A, 1:68:150, through *Chem. Abstr.* 46:11674, 1952), steam distillation of 125 pounds of *Adenosma capitata*, minus the non-aromatic roots, gave 400 Gm. (about 1 per cent) of a yellow oil with the following properties:

Specific gravity	**0.903**
Index of refraction	**1.4704**
Specific rotation	**—39.4°**
Acid value	**0.5**
Ester value	**6.5**
Acetyl value	**20.2**

The oil, washed with sodium carbonate solution and dried, was distilled at 15 mm. pressure to give five l-terpene fractions and two higher boiling *d*-sesquiterpene fractions. Refractionation of the terpene portion gave in the first three fractions about 80 per cent of a material which appears to be a mixture of l-limonene and cineole.

Treatment of the sesquiterpene portion in petroleum ether with sodium nitrite in acetic acid slowly formed a solid nitrosite which was not successfully crystallized.

New Mint Oil

Genetic research by T. Sacco (*Riv. Ital. ess. prof.* 34:337, 1952) has resulted in the production of a new variety of *Mentha* that should prove useful in various ways. The work with this new material is still going on, but the interim report provides the following constants:

Specific gravity	**0.9435**
Index of refraction	**1.4895**
Optical rotation	**-42.8°**
Acid value	**1.87**
Ester value	**20.57**
Ester value, after acetylation	**74.67**
Ester value, after hydrogenation and acetylation	**237.07**
Combined menthol	**5.72 per cent**
Free menthol	**15.72 " "**
Ketones, as carvone	**52.6 " "**
Solubility in 80° alcohol	**1:1**

The presence of *l*-carvone was definitely established by precipitation of the sulfide compound through treatment with hydrogen sulfide. After purification and decomposition, this compound yielded an oil with an optical rotation of -59.5. After extraction with sulfite solution, 52 per cent of a ketone constituent was obtained consisting entirely of *l*-carvone. Constants of the oily liquid obtained by decomposing the sulfite were:

Specific gravity	**0.9663**
Refractive index	**1.4987**
Optical rotation	**-61.21**
Solubility in 60° alcohol	**1:4**

Orris Oil

In discussing orris root and orris oil, A. Fayaud (*Soap, Perf. & Cosmetics* 25: 1057, 1952) states that, of the three current varieties of iris used in perfumes and pharmacy, it is the *Iris pallida* La Marck which is preferred for its delicate yet persistent odor and its yield of oil. That is also the reason why it is now cultivated in an almost exclusive manner. The flower has a very faint odor: almost none at all. All the perfume is contained in the roots, which are collected at the end of three years, the necessary time for their complete formation. The intensity and fineness of odor of the orris rhizome, which are in direct relation to the standard of the oil, are developed during the drying period and are increasingly intensified during the more or less lengthy stay of the roots in the stores.

Iris or orris oil is distilled by a very delicate and complicated process, reserved exclusively to industrial installations managed by experienced technicians and a well-equipped plant. Steam distillation is carried out in a large apparatus of plated copper or stainless steel under pressure of three or four atmospheres. Distillation takes from ten to twelve hours and gives the concrete essence or orris butter (Beurre d'iris), which is subsequently subjected to further treatment to eliminate impurities.

The concrete oil consists of a terpene of currently undefined constitution, aldehydes (furfural, nonyl and decyl aldehydes); the violet-like ketone irone, which is pre-eminently the odoriferous

TOP NOTES by Fritzsche

FRITZSCHE BROTHERS INC

FRITZSCHE BROTHERS, INC

FLOWER of the Month

February—Violet
or Primrose

March—Jonquil
or Daffodil

MAYBE YOU KNOW HIM . . .

CHARLES SCHNEIDER, second in point of service among our representatives, is one of the very few who graduated to sales from office rank. Starting in 1916, he was City Order Clerk until 1926 when he began calling on customers. Since that time, Charlie has brought in orders for many millions of dollars worth of aromatics, flavors and essential oils. He credits this record, not to supersalesmanship, but to the fact that he has been fortunate, all these years, to have been representing a good house with dependable products. A pleasant, even temper enables him to "get along" well under all circumstances and with most people. He specialized in accounting and business law at the start of his career and took top honors in public speaking. Broad in his interests, Charlie pitched semi-pro ball in his younger days and still has a keen liking for all sports; plays the piano, sings tenor, reads a lot and with it all still has time to enjoy and keep up his social contacts with hosts of friends. A Fritzsche veteran of 36 years, Charlie Schneider will always be cheerful, young in heart and—like the products he sells—trustworthy and dependable.

RECOMMENDATION of the Month

FRITZBRO SYNTHETIC FLOWER OIL ROSE OTTO

A truly fine substitute for one of the oldest and most beautiful florals ever produced—the now scarce Otto of Rose, product of Bulgaria's famed Valley of the Roses. For many years—even when the genuine oil *could* be had—perfume manufacturers employed FRITZBRO SYNTHETIC FLOWER OIL ROSE OTTO as a practical substitute. It offered complete fidelity at a fractional cost. As our recommendation this month—or *any* month—FRITZBRO ROSE OTTO is an outstanding replacement for the finest Bulgarian Rose. Trial ounce—$2.50; by the pound—$35.00. *It'll pay you to try it.*

A THOUGHT for

"Nothing is waste
the experience wis
—AU

A delicate floral bo
finest citrus-cologn
exquisite fragrance
own. By using a fo
17.5 parts (by wei
ZEPHLEUR, 245 p
senting 66½% of
87.5 parts Water, th
duce a summer colo
cacy and beauty. Ou
LOGNE ZEPHLEU
lb.; 8 oz. trial bott
timely offering . .

*Reg. U.S. Pat. Off.

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A THOUGHT for the Month:

"Nothing is waste of time if you use the experience wisely."

—AUGUSTE RODIN

Good Scents

FOR PERFUMERS

PERFUMES for GENERAL COSMETIC WORK

A long record of high performance distinguishes the fragrances listed below. They are all stable, well balanced compositions suitable for use in most cosmetic preparations.

A true pine fragrance, clean and fresh, ideal for bath oils, shampoos, liquid soaps and other preparations for which this invigorating note is appropriate.

Very popular note in both men's and women's cosmetics—shave lotions, cologne sticks, treatment creams, etc.

A moderately priced specialty suitable for use in a wide variety of cosmetic products. Its slightly modified rose character appeals to many users.

There is considerable demand for a spice note of this type and at this price. Excellently suited to lotions and creams.

A good, general purpose cosmetic perfume, reasonably priced and popular. Unlike most jasmines, does not discolor creams.

MAIL COUPON BELOW, filled in as indicated, along with check or money order for $1.00 to cover cost of handling and we'll send you ½ oz. samples of any THREE of the fragrances described above.

COLOGNE ZEPHLEUR

Bouquet Type

A delicate floral bouquet added to the finest citrus-cologne blend gives this exquisite fragrance a distinction all its own. By using a formula consisting of 17.5 parts (by weight) of COLOGNE ZEPHLEUR, 245 parts Alcohol (representing 66½% of total weight) and 37.5 parts Water, the perfumer can produce a summer cologne of unusual delicacy and beauty. Our Bouquet Type COLOGNE ZEPHLEUR is priced at $9.75 lb.; 8 oz. trial bottle—$5.00. Try this timely offering . . . *NOW!*

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Gentlemen: I attach $1.00 (check or M.O.) for which please send me, prepaid, ½ oz. bottles of each of the THREE perfume compositions checked herewith:

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COMPANY .....

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CITY ..... ZONE ..... STATE .....

- ☐ COLOGNE ZEPHLEUR
- ☐ PINE E-332
- ☐ FOUGERE I-256
- ☐ RED ROSE K-215
- ☐ SPICE L-132
- ☐ JASMINE I-798

Check 3 only

IN certain laboratory control tests, accurate color comparisons made against standard control samples provide an important check on the examined product's purity and quality. For all practical purposes, the spectroscopic determination is the most efficient method of making such tests quickly and accurately. This test is one of the many checks used by our Control Laboratories in their daily examination of newly arrived lots of certain essential oils and other basic raw materials before their acceptance for stock. A small detail in itself, this along with all the other rigid FRITZSCHE practices enables us to maintain the reputation we have long held for perfume and flavor specialties of fine quality and distinction.

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• MEMO •

To: MANUFACTURERS OF MEDICINAL PRODUCTS

From: FRITZSCHE BROTHERS, Inc.

Subject: FLAVOR PROBLEMS IN PHARMACEUTICAL PRODUCTS*

In an address* delivered before the Eastern Scientific Section of the American Pharmaceutical Association, Dr. E. H. Hamann, our Chief of Flavor Research, touched upon a few of the problems inherent in the flavoring of pharmaceutical products. Said he, in part:

"The vast field of new pharmaceuticals presents a formidable array of problems and each one defies a standard flavor recommendation and requires a tailor-made flavor which will suit its physical and chemical properties. The hydrogen ion concentration is not only a limiting factor for the type of flavor that can be used, but limits the use of such a flavor depending upon its constituents. Eriodictyon, for example, is incompatible with acids. In alkaline media, fruit syrups discolor and flavor is destroyed. Certain reactive groups such as aldehydes necessary in creating flavor are more or less rapidly affected by chemical changes. In alkaline media, cinnamon oil may lose the characteristic flavor and oils such as clove may cause discoloration of the finished product. In liquid preparations, precipitations may occur on storage, which a change in hydrogen ion concentration would rectify."

Obviously, these observations barely "scratch the surface" in suggesting the complexity of this problem and the conditions that must be met before a proper flavoring can be safely adopted and the product offered for nation-wide distribution and sale. The important thing for the manufacturer to bear in mind is that his flavor and palatability problems can be solved most economically and satisfactorily by taking full advantage of the specialized knowledge already available through reputable, long established sources of supply. As a leader in this field for over eighty years, our flavor laboratories have an incomparable background to draw upon. This specialized experience can be of material aid to you in your work.

FRITZSCHE BROTHERS, Inc.

* For a copy of this address fill in and mail coupon below.

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Gentlemen: Please send us a copy of Dr. Hamann's paper: "Flavor Problems in Pharmaceutical Products."

Perhaps you can also offer us suggestions for ☐ masking the objectionable flavor or ☐ improving the palatability of one of our products which is in the form of: (Check) ☐ Capsule ☐ Tablet ☐ Liquid ☐ Emulsion. From a flavor standpoint, its most objectionable ingredient is:

.....

Vehicle used is: .....

Its pH is: .....

Average dosage is: .....

Name ..... Title .....

Company .....

Address .....

City ..... Zone ..... State.....

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constituent; traces of esters (chiefly ethyl, methyl and cetyl myristate and oleic esters); and myristic and oleic acids. By steam distillation, 100 kilos of good roots yield from 300 to 350 Gm. of concrete. This contains theoretically some 80 to 85 per cent myristic acid. Eliminating this acid, a liquid product (absolute oil) is obtained in a yield of 15 to 20 per cent. This absolute oil contains about two-thirds of irone and one-third of various esters, etc., so that the orris butter itself should contain from 10 to 12.5 per cent of irone. The absolute oil is obtained from the beurre d'iris by the elimination of myristic acid by saponification. This is a delicate operation which requires a very careful technical approach and a sound knowledge of the right procedure for the purpose.

Gum Turpentines of Pines

A report on the composition of gum turpentines of three Mexican pines has been published by N. T. Mirov in the *Journal of the American Pharmaceutical Association* (Scient. Ed. 41:672, 1952). Thus, *Pinus ayacahuite* turpentine was found to be of the following composition: 20 per cent *n*-heptane; 70 per cent *dl*-α-pinene; five per cent terpinolene; three per cent of a bicyclic sesquiterpene whose dihydrochloride possessed a melting point of 108°; and possibly a small amount (less than one per cent) of oxygenated terpene derivatives.

Pinus cembroides turpentine consists of 92 per cent *d*-α-pinene, four per cent *dl*-*l*-limonene, two per cent sesquiterpene *d*-longifolene, and two per cent polymerized residue.

Pinus pinceana turpentine is composed of five per cent *d*-α-pinene, 80 per cent *l*-limonene, and five per cent of a new sesquiterpene, maderene.

In another report in the same journal (p. 677), Mirov presents data on the composition of gum turpentine from two American pines. He found that turpentine of *Pinus resinosa* consists of *dl*- and *d*-α-pinene, 92 per cent; β-pinene, three per cent; phellandrene, three per cent; and perhaps about one per cent of a dextrorotatory component possessing a boiling point higher than 172°.

Turpentine of *Pinus reflexa* from Arizona has a rather complicated composition: *n*-heptane, five per cent; *dl*-α-pinene, 75 per cent; Δ^3-carene, five per cent; *d*-terpinolene five per cent; *n*-undecane, two to three percent; cadinene, five per cent.

On the basis of chemical composition of its turpentine, it appears that *Pinus reflexa* is related to *P. monticola* inasmuch as both contain *n*-undecane. On the other hand it is related to *P. ayacahuite* since both species contain *n*-heptane, terpinolene, and cadinene in their turpentine. *P. flexilis* does not possess any of the four above-mentioned ingredients.

Clove Oil

According to a note in the *Pharmaceutical Journal* (170:11, 1953), G. E. Smith has assembled considerable data on clove oil. In his talk, Smith stated that the clove tree was remarkable for the way it produced eugenol. Essential oil consisting mainly of this phenol was found in almost every part of the tree, including roots, twigs, leaves, flower-buds, flower-stems, and fruits. This ability to produce eugenol was evolved in prehistoric times by mutation from a non-aromatic form of the clove tree which still flourishes in the Moluccas side by side with its aromatic descendants. The official oil was distilled only from cloves, the dried flower-buds of the clove tree. In normal years about a quarter of the clove crop was distilled for oil, the output being some 400 tons. The finest oil was produced by water distillation, but steam distillation accounted for most of the clove oil. Inferior oils were obtained from clove stems in Zanzibar, and from clove leaves in Madagascar. These oils were rich in eugenol but differed from the true oil of cloves in their minor constituents, which were largely responsible for the characteristic odor and flavor of the oil. Uses of clove oil were of three kinds: first, odor and flavor uses in perfumery, pharmacy, and food manufacture; second, medicinal uses; and lastly, chemical uses where clove oil was used as a source of eugenol in the manufacture of fine chemicals such as *iso*eugenol and vanillin.

Oil of Homalomena Rubescens

According to Sagopal and K. Bhatia (*Soap, Perf. & Cosmetics* 25:1265, 1952), the roots from *Homalomena rubescens*, reported to be fairly common in Sikkim, the Khasia Hills, Cachar district, North Cachar Hills and Karimganj in Assam, are pleasantly aromatic and the whole plant is used medicinally. The powdered rhizomes are introduced into smoking tobacco, snuff and *zarda* compositions.

The essential oil from the roots has been distilled by the methods of water-distillation and steam-distillation (the average yield being five per cent on a dry basis) and examined in detail for its physicochemical properties. In their investigations, Sagopal and Bhatia observed that the roots could be divided into two lots; namely first quality roots and second quality roots. The properties of the oils obtained from the two lots are given in the table below.

The difference in the characteristics of the two qualities of the roots makes it evident that careful air-drying of the roots is necessary to obtain oil of first quality.

The essential oil, on fractionation, gave a major fraction at 190-200° C. (704 mm) consisting mainly of alcohols (40 per cent) and esters (2 per cent). This fraction gave a phenylurethane, melting at 66° C., and also yielded, on oxidation with chromic acid, citral, characterized through its semicarbazone, melting at 171° C. The fraction boiling between 210-220° C. also gave a phenylurethane, melting at 110° C. (uncorrected), indicating the presence of terpineol, probably in its *aero* form.

In the opinion of the investigators, the oil appears to be an important perfumery ingredient of economic value. The roots give, on processing, three crystalline acids besides a very minute quantity of a neutral crystalline substance and an amorphous glucoside.

Physico-chemical properties	Oil from first-quality roots	Oil from second-quality roots
Color, odor and description.	Light straw-colored limpid oil with pleasant flowery odor like lily-of-the-valley.	Yellowish-brown oil with a pleasant flowery tone covered with a harsh note.
Specific gravity (30° C.)	0.8868	0.8920
Refractive index (30° C.)	1.4598	1.4621
Optical rotation (D30° C.)	—14° 50′	—9° 36′
Acid number	2.80	3.40
Ester number	5.60	6.50
Ester number after acetylation	137.0	129.3
Solubility in 70 per cent alcohol	Clear solution in four vols. at 30° C.	

Animal Health

Avianized Vaccine for Canine Distemper

Fifty dogs were immunized against canine distemper during a ten-month period by O. A. Lopez-Pacheco (*J. Am. Vet. Med. Assoc.* 121:468, 1952). The vaccine used was canine distemper virus (modified) (chicken embryo origin—vacuum dried), avianized. The vaccine was used according to the directions of the manufacturer. All 50 dogs vaccinated were examined at least twice subsequently at intervals of ten to twenty days and no symptoms of illness were seen that could have been ascribed as a severe reaction of the vaccine. To determine if any of the dogs were exposed to distemper, a follow-up was made six months after vaccination. It was highly probable that most of the vaccinated dogs came in contact with distemper-infected animals. However, none of these dogs developed any signs of distemper.

On the basis of these and other observations, Lopez-Pacheco is of the opinion that this canine distemper vaccine (avianized) seems to be, so far, the vaccine long sought by the veterinary practitioner—a combination of high immunity, ease of administration, innocuousness, and low cost. The vaccination of dogs against distemper with this vaccine is facilitated by the factors enumerated. Particularly important is the fact that it is not necessary for the dog owner to return the dog for another visit to the veterinarian except in very special cases in which the condition of the dog requires it.

Udder Ointment

A veterinary ointment, said to be essentially useful in the treatment of udder inflammation in cattle, is described by K. Gsten in Austrian patent 168,642 as consisting of:

Amino acids, aqueous solution	**13.0 parts**
Sodium benzoate	**0.5 part**
Lanolin	**20.0 parts**
Petrolatum	**60.0 "**

The amino acids used in this preparation are obtained by the hydrolysis of annual proteins.

Anesthetics for Animal Surgery

According to F. G. Hobart (*Manuf. Chem.* 24:13, 1953), anesthesia as a prelude to animal surgery has been a subject of great interest to British workers and several interesting anesthetics have found considerable favor in veterinary spheres. Of especial interest in this connection is the sodium derivative of thialbarbituric acid (Kemithal sodium), which belongs to the group of ultra short-acting barbiturates. This compound, which has been widely used also in human medicine, has proved a safe and reliable anesthetic, especially for smaller animals. The drug in 10 per cent solution is administered by intraperitoneal, or intravenous, injection. It has been shown to possess about half the potency of thiopentone and is slightly less active than hexobarbitone. It has, however, a higher therapeutic ratio than either of these compounds. In further comparison with thiopentone it is stated to be less depressant to respiration.

The need for a dependable intravenous anesthetic for larger animals led to the development of β-naphthoxyethanol (Anavenol). Detailed studies of the action of this drug have been made by several workers. Its pharmacology is of unusual interest because, unlike other anesthetics in common use, it gives rise to anesthesia of an ascending type, the limbs and trunk being affected before the head and neck reflexes and higher centers. The anesthetic effect of β-naphthoxyethanol has been shown to follow in direct ratio to its level in the blood. A single dose of the drug is rapidly detoxicated; in about 10 minutes the amount circulating falls to below anesthetic concentration. About 20 per cent is oxidized to β-naphthoxyacetic acid, and salts of this acid are found in the urine for a period of up to 12 hours.

The drug is now used together with thialbarbituric acid, the combination employed (Anavenol K) comprising a stable suspension of β-naphthoxyethanol (10 per cent) with the barbiturate (2.5 per cent) in an isotonic aqueous medium. Synergism is evidenced by the fact that the therapeutic ratio of this preparation is higher than that of either active constituent. This suspension is nonirritant if accidentally injected extravascularly, and it is a suitable anesthetic for the equines, camels, cattle and other ruminants, and also the pig. Its use is not advised for other species or in old and sick animals, especially in the presence of cardiovascular or pulmonary dysfunction.

Medicaments for Eye Diseases of Animals

A concise consideration of the therapeutic agents used in the treatment of common eye diseases in animals has been prepared by A. C. Esposito (*J. Am. Vet. Med. Assoc.* 121:297, 1952). For surface anesthesia, he uses Pontocaine (0.5 per cent) solution applied topically to the eye. He has found that many animals are sensitive to Butyn, and cocaine solutions cause corneal desquamation. For the local anesthesia injected around the lids for akinesia and retrobulbar block, he uses a two per cent solution of novocaine with eight drops of adrenalin (1:1,000) to the ounce, adding 150 to 200 turbidity units of hyaluronidase to help spread the solution.

In discussing the use of antibiotics, Esposito states that for severe eye infections, he prescribes penicillin (the solution, not the ointment, usually with 1,000 units per cubic centimeter of solution) to be administered every two to three hours. He also uses it systemically (usually 400,000 units daily for a minimum of three days), since it is excreted rapidly in the urine and its action is not impeded by exudate or pus. It is ineffective on gram-negative bacilli.

Aureomycin, terramycin, and chloromycetin are administered in 250-mg. doses in capsule form. Bacitracin and tyrothricin are given in 0.2 per cent doses but these do not have as broad a spectrum as the other antibiotics and are not used except topically, or in mixed solutions to body cavities. Streptomycin is specific for gram-negative bacilli and tuberculosis and is being used almost exclusively for the latter disease.

Among chemotherapeutic agents,

Esposito feels that sodium sulfacetamide 30 per cent solution or in the 10 per cent ointment form is probably the best of the chemotherapeutic agents for use in diseases of the eye. It is a sulfonamide and has the same organism spectrum (*i.e.*, gonococcus, meningococcus, hemolytic Streptococcus, Staphylococcus, *Bacillus welchii*, pneumococcus, trachoma, etc.). None of the sulfonamide drugs are effective in the presence of secretion or pus, in counterdistinction to the action of the antibiotics.

When considering the role of ACTH and cortisone, Esposito stresses that although commonly associated in action and name, the two drugs are separate and distinct in final action. In the diseases of the eye he commonly uses cortisone. It is used in diluted form 25 mg. (1 cc.) diluted to 5 cc. with special diluents or saline, using one drop every two or three hours; or he injects 0.2 to 0.5 cc. subconjunctivally on the globe every two or three days. It is also used systemically and can be injected retrobulbarly.

Intranasal Medication for Cats and Dogs

The advantages of using an antibiotic-vasoconstrictor combination for the intranasal treatment of dogs and cats is indicated in the report of K. J. Thomas (*Vet. Med.* 47:424, 1952). In their practice infections of the upper respiratory tract of small animals were successfully treated by the antibiotic, tyrothricin. Antibacterial activity, elimination of mucopurulent discharges, and relief from congestion were effected by intranasal applications of Prothricin, a solution of tyrothricin and propadrine hydrochloride. Two hundred and ninety-four cases with infection or congestion of the nasal mucosa receiving repeated daily doses responded favorably and without evidence of irritation, toxicity, or sensitivity. Particular attention was given to hunting dogs receiving treatment, and the follow-up of such cases revealed no loss or weakness of the sense of smell. Besides treating pathologic conditions of the nasal mucosa, the use of tyrothricin and propadrine hydrochloride has proved satisfactory as a prophylactic measure for all hospital in-cases.

Dihydrostreptomycin for Mastitis

According to an item in *Veterinary Medicine* for February, 1953, the antibiotic, dihydrostreptomycin, has been giving promising results when administered intramuscularly and into quarters infected with *Streptococcusa galactiae* type of mastitis. The dosage depends on the severity of the symptoms. Dihydrostreptomycin was administered at 12-hour intervals. It is reported that 75 per cent of affected animals in the dry lot responded to this treatment and that they were returned to the milking line as profitable producers. Those that did not respond to this treatment were marketed. The coliform type of infection has not been found to be so responsive to this antibiotic.

Diet and Response of Chicks to Vitamin B_{12}

The influence of diet composition on the response of chicks to vitamin B_{12} has been studied by D. C. Hill and H. D. Branion (*Poultry Sci.* 31:892, 1952). In their investigations, the addition of corn oil and extra protein to a diet deficient in vitamin B_{12} was found to influence the growth response of chicks to dietary supplements of the vitamin. The addition of 5 per cent of corn oil to a diet containing approximately 20 per cent protein did not increase the response and only a moderate increase occurred when the protein level was raised to approximately 30 per cent with no added corn oil. However, a greater than two-fold response was observed when both extra corn oil and protein were included in the diet. This effect was partly due to a marked depression in growth when the vitamin B_{12} deficient "high" corn oil —"high" protein diet was fed.

Thyroprotein and Fat in Laying Diets

Conflicting conclusions concerning the effect of thyroprotein (iodinated casein) upon the reproductive performance of chickens have been reported by different investigators. For this reason, R. J. Lillie, J. R. Sizemore, J. L. Milligan and H. R. Bird (*Poultry Sci.* 31:1037, 1952), made investigations to determine the effect of thyroprotein in laying diets with Rhode Island Reds maintained in a multiple-unit laying house. Different combinations of thyroprotein, lard, choline, dienestrol diacetate and vitamin B_{12} were fed in one experiment for a period of 22 months; different combinations of thyroprotein and fat were fed in a second experiment for a period of about 11 months.

Thyroprotein did not increase egg production in either of the experiments with any of the dietary combinations. It decreased body weight and feed efficiency. The inclusion of eight per cent of lard in the diet resulted in an increase in body weight and feed efficiency.

Phthalylsulfacetamide for Calf Scours

Despite modern therapeutic agents, says A. B. Christian (*J. Am. Vet. Med. Assoc.* 121:185, 1952), infectious diarrhea or scours in calves continues to be a problem. His report indicates that one of the newer sulfonamides, phthalylsulfacetamide, gives excellent results and offers distinct advantages over the older sulfonamides.

In considering the older and more commonly used drugs, Christian notes that various chemotherapeutic agents have been used as a prophylaxis as well as a treatment for calf scours. Of these, the nonabsorbable sulfonamides, such as sulfathalidine, seem to have given the best results and some workers have reported on the use of sulfathalidine in controlling calf scours. However, sulfathalidine exerts its bacteriostatic effect only in the lumen of the intestinal tract and a sulfonamide that would be absorbed into all layers of the intestinal wall, reaching the infecting organism, would seem more desirable and effective.

In view of these and other considerations, 27 cases of infectious calf scours were treated with phthalylsulfacetamide. It was found effective when a total of 2.5 gr. per pound of body weight was given daily in divided doses. Due to its ability to be absorbed into the intestinal lining, reaching deep-seated infections, it is a valuable treatment for infectious calf scours.

Aureomycin in Retained Placenta in Cows

In reporting on the prophylactic and therapeutic use of aureomycin in retained placenta in cows, J. H. Beattie and J. D. Leaming (*Vet. Med.* 47:451, 1952) state that when placental membranes are removed manually or where there is pathological retention of placenta, the use of an effective chemotherapeutic agent to treat or to prevent endometritis or metritis is of primary importance. Observations covering a period of about one year indicate that aureomycin is an effective agent for this purpose. During this time, 612 cows with pathologically retained placenta have been treated with aureomycin, following manual removal of the membranes, or introduced into the uterus with membranes intact. In 610 cows, there was no clinical evidence of postoperative infection or septicemia. In two cows, where membranes were only partially removed, acute metritis developed.

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Abreast Of The Markets

Botanicals Unusually Active in February; Conditions Quiet Otherwise; Strychnine Down 15c; Alcohol Steady

Although there were spurts of activity scattered through the markets last month, the over-all picture, in general, was unusually quiet for this time of the year. The graphs indicate that there were slight declines in all phases of the market, with the exception of the botanicals. These botanicals, for the first time in many months, were exceedingly active, with the index climbing from 206.8 to 215.4.

The concensus throughout the trade in respect to the botanicals is that consumers are now finding it necessary to make rather heavy replacements on their stocks. With the prices being quoted from the respective origins having advanced considerably in some cases, and more moderately in others, the consumers are beginning to realize that the over-all botanical price level is higher than it used to be when they were depending on old stocks.

In the medicinal chemicals group, the index was down only 0.1 to 104.1, and this was affected by a drop in the domestic price of quicksilver. While the Italian and Spanish export prices are higher, and while those countries are at present tending to keep the prices higher, it appears that dealers in this country have lowered their quotations in order to enhance sales of the mercury. Other chemicals which showed interest last month, but which did not affect the medicinal chemicals graph include caffeine, theophylline, theobromine, cream of tartar and strychnine. The first three chemicals, though not changed in price, have become very unsettled as a result of sizable imports which have been entering the United States. A price break may occur on these items in the future, if the pressure becomes great enough.

Strychnine and its major salts were reduced by 15 cents an ounce.

One of the most striking changes in the chemical line appeared in the 19-cent increase of acetanilid, which is the most drastic price change this item has exhibited in a very long time.

Prices quoted in this section were current on the first of this month.

The essential oils index, which dipped 0.9 of a point was caused by the reduction of eucalyptus oil from $1 to 95 cents and the decrease of lavender oil from $3.50 to $3. The former oil was reduced because of an absence of demand in this country, and the latter, some sources say, because of the French government's re-establishment of an export subsidy.

Most of the other oils are fairly stable at the present time. Those such as clove, anise and cassia continue to be hard pressed because of their inaccessibility.

Whether or not the markets will be greatly affected by the Government's removal of price ceilings is yet to be determined. Toward the end of February and the beginning of March, some botanical houses, for example, were re-examining their price schedules to see how they compare with the present conditions. In many items, the spot prices were considerably lower than the respective ceiling prices, and so, in those cases, there would be few changes.

Alcohol Demand Steady

There was a constant and steady demand for alcohol during February, with available supplies holding up rather well. Sources indicate that, while the greater proportion of dealers were quoting the ethyl alcohol at 55 cents a gallon on a spot basis, most of the alcohol business was being completed on the lower 40-cent level.

The following data on the supply, production, withdrawals, and stocks of ethyl, completely denatured and specially denatured alcohol during the month of December, 1952, as compared with December, 1951, were released last month by the Alcohol and Tobacco Tax division of the Bureau of Internal Revenue, Treasury Department.

Production

	Gallons	
	1952	1951
‡Ethyl	42,181,654	39,825,467
*Completely denatured	87,992	46,054
*Specially denatured	23,328,766	22,412,242
Withdrawals		
‡Ethyl, tax paid	1,448,109	2,398,654
tax free	40,994,944	52,921,353
*Completely denatured	73,917	40,948
Specially denatured	23,591,449	21,915,871
Stocks		
‡Ethyl	83,245,376	80,360,601
*Completely denatured	39,596	44,687
*Specially denatured	8,245,426	8,295,627

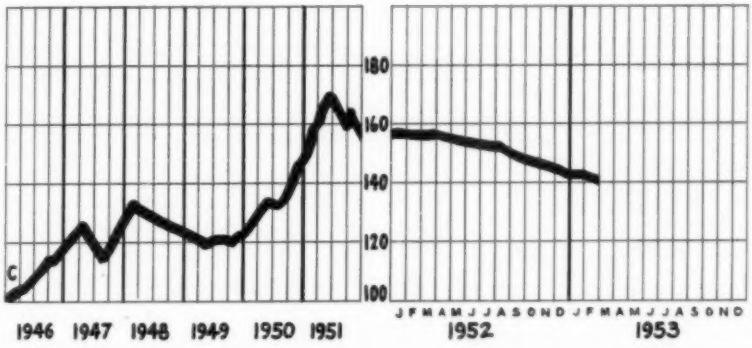
*Wine gallons. ‡Proof gallons.

Ergot on Way Up

Because the price of ergot is beginning to increase at the origin, this development has begun to be reflected on the spot market, with increases up to 25 cents having been noted in recent weeks.

(*Continued on page 392*)

25 Cosmetic Raw Materials—Unweighted Price Index. 1926=100.



The cosmetic raw materials index went down slightly from 142.3 to 140.8. Balsam copaiba, balsam Peru and balsam tolu were lower.

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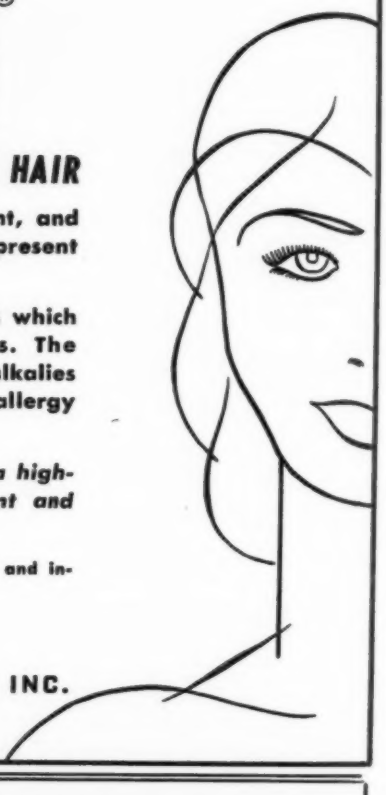

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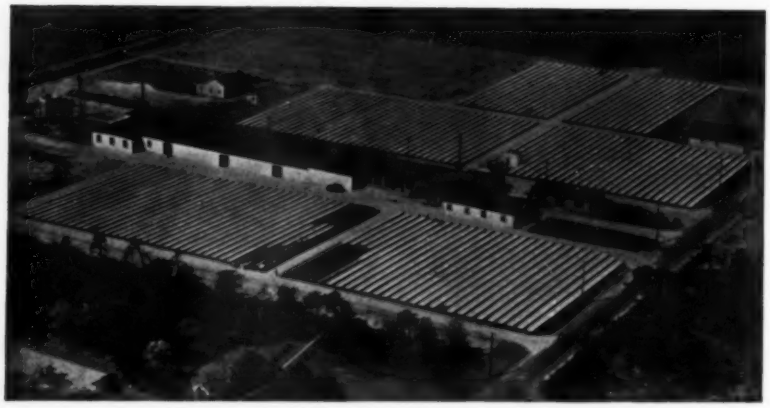

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Acetanilid Advances Sharply, Now at 80c; Mercury, Santonine, Quinine Sulfate Reduced; Menthol Shows First Signs of Firmness

Acetanilid exhibited the sharpest price increase last month that it has had in a very long time, when it advanced 19 cents. The chemical is now selling at 80 cents a pound for 2,000 pounds, and for 86 cents for smaller quantities.

Mercury Price Down

Quicksilver dropped to $206 last month as a result of action on the part of dealers who acted in the face of a reduced demand. The import prices from Italy and Spain remained at previous levels.

Quinine Sulfate Down 14½ cents

Quinine sulfate took a sudden drop early in March to the level of 42 cents an ounce, mostly as a result of competition among the major suppliers in this country. Other quinine salts were expected to follow suit in a short time.

Santonine Reduced

Santonine was recently reduced from $118 to $95 a pound, with a range up to $105, depending on the quantity desired.

Menthol Displays Firmness

Menthol in some quarters was being quoted at $5.45 for the Brazilian material and as high as $7 for the Japanese variety. There are still some cheaper lots available from the South American material in the range of $5, according to spokesmen, but they are dwindling.

Candelilla Decree, Mexico

The Mexican government recently issued a Presidential decree which prohibits the exploitation of candelilla wax, according to *Chemurigic Digest*. This decree prohibits the exploitation of the wax plant from December, 1952, to September 30 of this year.

This measure was taken to halt extensive exploitation of candelilla plantings in the states of Chihuahua, Coahuila, and others, where the species has been endangered to the point of extinction.

Exploitation of the wax has decreased in the last few years, as is shown by the following figures: 5,160 short tons exported in 1947; 685 short tons in 1948; 2,696 in 1949; 3,597 in 1950; and 2,670 in 1951. During the last two years cited, these exports were valued at about 3½ million dollars.

This presidential order requires that the present concessionaires or holders of exploitation permits must turn in their permits to local agricultural authorities. Those having stocks of candelilla wax on hand had to make a written report on quantities and location of stocks.

No movement of candelilla wax, according to the report, will be permitted from deposits or warehouses without express authorization of the Mexican Department of Agriculture.

Chamomile Flowers Exhausted

This market is extremely firm, the price of the flowers having just recently advanced to 90 cents a pound owing to a complete lack of supplies from the origin, Hungary. At the same time, demand in this country has been very much on the active side and has depleted the stocks of several dealers. The entire situation has now been reduced to one of hunting for meagre stocks wherever they can be found on the spot market. There is not expected to be any relief in this commodity until late summer when the new-crop material will become available.

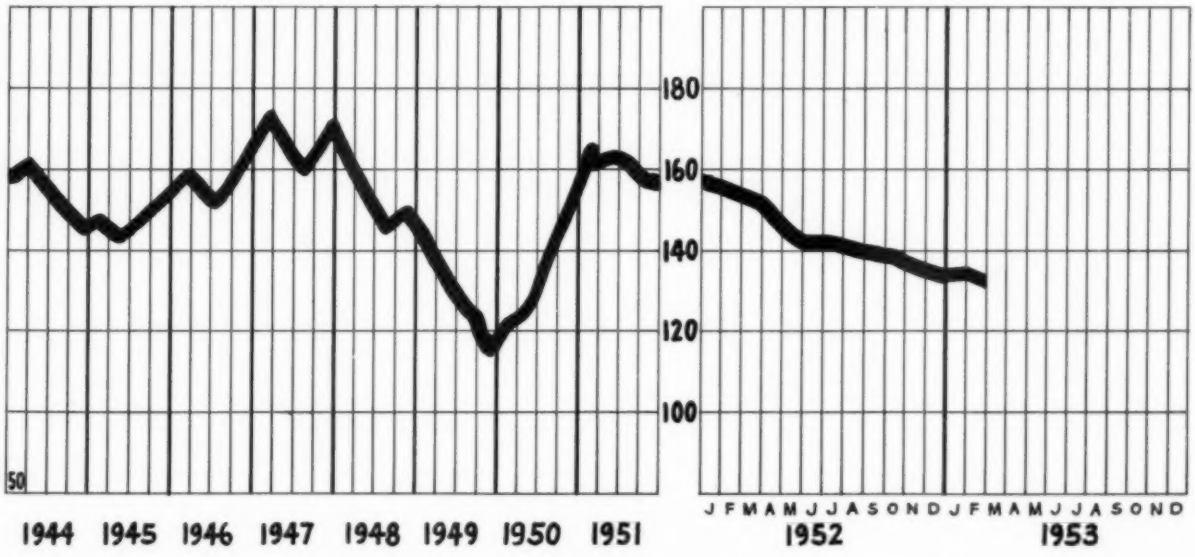
Arnica Flowers Scarce

Arnica flowers, ranging between 75 cents and 80 cents, have developed a severe scarcity for the true Montana variety. There are lower grade leaves available, however, emanating from Mexico, which are selling for about 45 cents a pound.

Agar Lower at $2.10

In contrast to several months ago when the price of agar was near $3, and available supplies of the item in this country were at a low ebb, the picture

50 Raw Materials—Weighted Price Index. 1926=100.



The price index of fifty commodities for February went down from 134.2 to 132.6.

February Price Changes

UP
Acetanilid 19c
Chamomile Flowers 20c
Ergot 10c
Ipecac Root 25c
Orris Root, Flor. 8c
Orris Root, Verona 5c
Saffron, Amer. 15c
Vanilla Beans, Tahiti 25c

DOWN
Agar Agar, No. 1 25c
Arabic Gum, Sorts, Amber ½c
Balsam Copaiba, Para 15c
Balsam Peru 10c
Balsam Tolu 15c
Caraway Oil 15c
Coriander Oil $2
Eucalyptus Oil 5c
Lavender Oil 50c
Mace Oil, Distilled 40c
Mercury $7
Quinine Sulfate 14½c
Santonin $23
Vanilla Beans, Mex. Whole 25c

today is quite the opposite. For a number of months the price level has been slipping down, especially since new-crop material appeared on the market, and agar is now being quoted at $2.10 a pound. Some observers feel, however, that the market has just about reached the bottom, and that a reversal may soon appear.

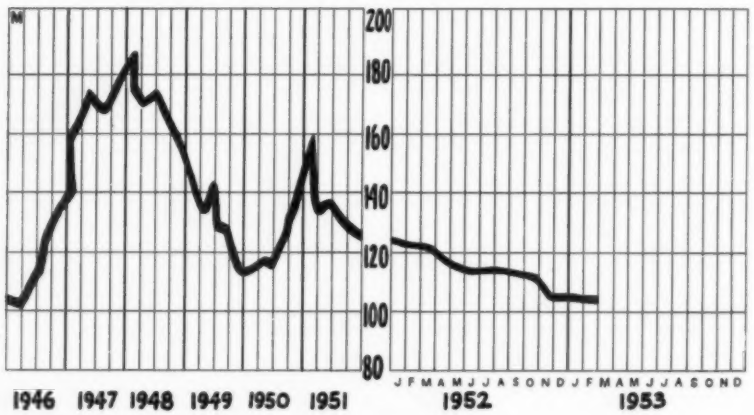
Ergot on Way Up

(*Continued from page 389*)

The price level of ergot is now established at $3.25. As more replacement buying takes place in the near future, additional price hikes are expected.

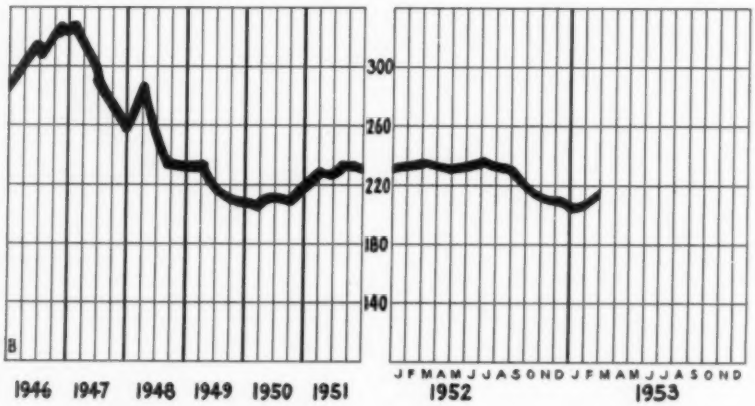
This price advance took a longer time in coming than it would have done under ordinary circumstances, since a number of dealers persisted in selling the material on spot at prices based on outdated replacement costs. When the replacements were obviously on the way up, these dealers held their spot prices down, taking a loss each time a sale was made, because they were eventually forced to enter the replacement market at a much higher level and replenish their stocks. Had they yielded to the higher replacement figures sooner, they would be in a better position today, as far as dealer profit is concerned.

15 Medicinal Chemicals—Weighted Price Index. 1926=100.



The medicinal chemicals index fell very slightly from 104.2 to 104.1. Mercury was lower.

15 Botanicals—Weighted Price Index. 1926=100.



The botanicals index advanced noticeably from 206.8 to 215.4. Agar and balsam tolu were lower; ergot, ipecac root and orris root were higher.

Papain Much Firmer

Although there were no price changes in papain last month, dealers expect this item to advance rather steeply in the immediate future. Demand for papain is increasing to large proportions, while supplies from the origin are on the limited side.

Quince Seed Very Tight

The higher quality quince seed is very scarce, according to sources in the trade, and most of the material available is of lower quality. Dealers are by and large reserving their better stocks for regular customers, since they do not expect any relief from the origin until January, 1954. The last crop, collected in January of this year, was on the meager side, chiefly because of the unsettled conditions in the Middle East.

Anise Seed Star Unobtainable

The price of anise seed star remained within the range of 75 cents and 78 cents last month but these figures are mostly nominal. This apparent stability belies the fact that there is no material whatsoever arriving at the present time from China or from Indo-China. There are no exports available, and supplies at these origins are said to be very meagre as well.

Heavy Buying in Ipecac Root

There was a 25-cent increase in ipecac root last month to the level of $6 because of a great deal of buying on the spot market. In spite of this spurt, reports indicate there are sufficient stocks in this country to take care of needs for the next few months at least.

Bois de Rose Higher at Origin

What may prove to be a reversal in the downward trend of the bois de rose

market occurred in February when shipping prices of the oil were advanced. In some quarters there was a slight increase in spot prices; however, the price of the oil in general ranged from $3.65 to $4.50.

Orange Oil Steady

The soft condition in the orange oil market remained just about the same during February, with reports to the effect that Florida producers were still way ahead in the supply over demand for the oil. Cold pressed oil was selling from $1, and the American distilled, for 70 cents. In a few months, when the Spring season brings a heavier consumption of soft drinks, the market will become more stabilized, the demand more equal to the production, and the price will at that time probably advance accordingly.

Scarcity in Spearmint Oil

This oil has become increasingly more difficult to obtain in the last few months, and, according to spokesmen in the trade, will continue in this manner for some time to come. There are several factors behind this development, each one of which is adding to the tight supply picture.

Exports of spearmint oil to Europe and to the Far East have been much greater than usual in recent months, causing a drain on the available supply and cutting into domestic consumption. Added to this is the report that manufacturers are requiring more and more spearmint oil for use in chlorophyll preparations. These chlorophyll needs are not great enough by themselves to distort the market to this extent at the present time, but they are expected to increase. Finally, another important factor in the spearmint deficiency is that last year's oil production was far short of normal, with the result that there was no carry-over at all into the new producing season.

Farmers this year, it has been pointed out, intend to increase their plantings so as to be in a much better supply position by the time 1954 comes around.

Lemon Oil Quite Limited

There was no change in the California lemon oil range extending between $5.75 and $6, but the market appeared in a very tight position toward the end of the month. Demand for the oil was exceeding the available domestic supply, and there did not appear to be any signs of a letup in the offing, or of an increase in the oil production. Some Italian oil was being sold at prices beginning at $5.65, a factor which was said to be easing the picture to a certain degree.

Eucalyptus Oil Down

The price of eucalyptus oil fell off 5 cents last month to the range between 95 cents and $1.10, a development which was due largely to the absence of demand for the product among consumers.

Lavender Oil Down

Lavender oil was reduced from $3.50 to $3.00 which very possibly resulted from the French Government's move of establishing the export subsidy once again. Some quarters believed, however, that this reduction would prove only temporary, since the new-crop oil will not appear on the market for quite some time.

No Relief in Clove Oil

There has been very little change in the clove oil picture, since distillation operations are still at a standstill in this country. Any oil that is sold today is foreign-distilled material. The supply position is very tight, with some dealers not even bothering to quote any prices.

In other quarters, however, some bud oil, distilled in Madagascar, has been arriving in this country in very limited quantities. The particular dealer, or dealers, quoting this oil are distributing it only to regular customers, and are not encouraging sales at all.

Bergamot Maintained at $13

The price of bergamot oil was held at $13 a pound last month, with a few scattered reports setting it a little lower toward $12, probably as a result of the recent Consortium price reduction. Spokesmen have indicated that the present level of the oil is expected to remain fairly constant for some time to come.

Cassia Oil Very Limited

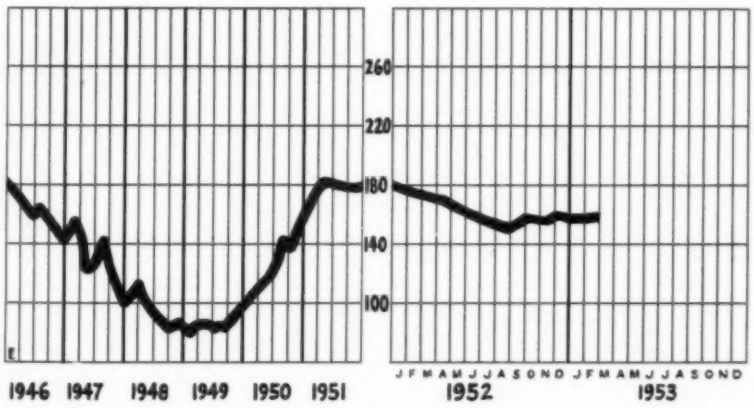
Cassia oil was last month being quoted in the range between $5.50 and $6.50, as has been the case for a long time, but this price is now largely nominal. There is virtually no oil entering this country at the present time, and little chance for replacement until the Far Eastern situation is cleared up.

Anise Oil Still Available

Although by and large there is very little anise oil reaching the United States through the normal channels of commerce owing to the embargo on Communist China products, reports have been received of material emanating from Indo-China. The price of the oil last month held at $2.20 a pound in most quarters, with a few scattered quotations established at slightly lower levels. Apparently, these lower prices have been brought about by the influx of the Indo-Chinese material.

Regardless of this price reduction, which represents a very small portion of the anise-oil market, the price will in all probability be maintained at the $2.20 level, and may be forced higher in the future, should demand outstrip the limited supply from overseas.

15 Essential Oils—Weighted Price Index. 1926=100



The essential oils index went down very slightly from 156.9 to 156.0. Eucalyptus and lavender oils were lower.

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Industry's Books

Metal Data, Revised Edition of Metals and Alloys Data Book, by Samuel L. Hoyt, Technical Adviser, Battelle Memorial Institute, Columbus, Book Div., Reinhold Publishing Corp., New York, (1952), 526 pp., Cloth, $10.

This new edition of the author's widely-used Metals and Alloys Data Book, similar in form to its popular predecessor, not only includes the most recent information available, but offers a wealth of new data on such topics as hardenability of H-Steels, the recently developed Super Alloys for high-temperature stress members, and other new alloys. The original purpose of the book has been adhered to in this second edition; to select important data from reliable sources, and to present them to metallurgists and engineers in a form usable for daily reference. As a result, the bulk of the material is offered in at-a-glance tabular form with a minimum of descriptive text. Nearly 700 tables and graphs bring you useful working information on such metallic properties as tensile strength, hardenability, thermal expansion, creep strength, endurance limit and yield strength at normal, subnormal, and elevated temperatures, and for various conditions of mechanical treatment. Numerous special features include a listing of commonly used test bars, hardness tests, corrosion data, conversion factors, applications of materials and the properties of elements. Here you'll find full information not only on all of the important metals and alloys but on many of the less common metals as well.

Soluble Silicates, Their Properties and Uses, Volume 2: Technology, by James G. Vail, D.Sc., Member of the Board of Directors, assisted by John H. Wills, Ph.D., and the staff of Philadelphia Quartz Co., American Chemical Society Monograph Series No. 116, 669 pp., (1952), Reinhold Publishing Corp., New York, cloth $15.

This is the second volume of a comprehensive, two-volume monograph written to replace the out-of-print Soluble Silicates in Industry. These two volumes comprise the only treatise to offer a complete review of the known properties and industrial applications of soluble silicates. The monograph was divided into two volumes to provide a rapid reference source for the working technician. Volume I is devoted to the theoretical aspects of the subject, covering in detail past and present manufacturing processes, properties of homogeneous and heterogeneous systems of glasses, the formation of metallic silicates, and other fundamental material. Volume II, slightly larger in size, deals with the more practical considerations involving the applications of soluble silicates to industry.

Textbook of Quantitative Inorganic Analysis, Third Ed., I. M. Kolthoff, Ph.D. and E. B. Sandell, Ph.D., Professors of Analytical Chemistry, University of Minnesota, 759 pp., The Macmillan Co., New York, cloth $6.50.

Instrumental methods of quantitative analysis have developed tremendously since the publication of the first edition of this book in 1936. These methods find application especially in industrial laboratories where economy in time and manpower is gained by their use in routine work. It might seem that because of the development of self-registering instruments and automatic apparatus, classical analytical chemistry is becoming outdated. No matter how phenomenal the further development of instrumentation, the authors take the view that the teaching of the theoretical and practical fundamentals of classical analytical chemistry remains essential in the chemistry curriculum. In accordance with the above views the authors have adhered to the aims and plan of the first edition, although the new edition has been modernized and expanded. In order that it may serve better as an introduction to instrumental analysis, Chapter XLII, a survey of physical and physicochemical analytical methods, has been rewritten and enlarged. Other major changes include the thorough revision of Chapter VI, dealing with quantitative separations. The general rationale of separations is considered and fuller treatment is given to organic reagents, electrolytic methods, extraction methods, and separations based on ion exchange and chromatography. A qualitative and quantitative discussion of the Bronsted theory of acids and bases has been added to Chapter IV. The chapter dealing with errors has been revised and expanded, but the discussion remains elementary. Other chapters have been revised to bring the contents up to date, and many new problems have been added.

Wood Chemistry, Second Ed., Edited by Louis E. Wise, The Institute of Paper Chemistry, and Edwin C. Jahn, State University of New York College of Forestry, Vol. 2—American Chemical Society Monograph Series No. 97—1343 pp., (1952) Book Division Reinhold Publishing Corp., New York, Cloth $15.

Along with Volume 1, this book describes fully the basic chemistry underlying current processes and products employing wood or wood cellulose. Throughout both volumes, many chapters are entirely new; others found in the older edition have been completely rewritten from a new and fresh approach. Special topics not normally included in such a treatise—the growth, anatomy and physical properties of wood, the phenolic and related extraneous constituents of heartwood and their relation to taxonomy, the chemistry of extractives, the biological decomposition of cellulose, and the chemical analysis of wood and its components—are all thoroughly covered. Volume 1 deals with the growth, anatomy and physical properties of wood, the components and chemistry of the cell wall, and the extraneous components of wood. In Volume 2, the surface properties of wood, its chemical utilization, biological decomposition and chemical analysis are discussed. Cross references between volumes have been kept to a careful minimum.

Administrative Progress in 1952

(*Continued from page 323*)

Progress has been made this year in the war against cancer quacks. In the old days there were numerous nostrums on the shelves of every corner drug store which promised cure of cancer, diabetes, tuberculosis, and other dread diseases. The nostrums have been moved to treatment centers, in various guises—tourist camps, bath house sanitariums, and phony "clinics." As long as they operate on a local basis we cannot act, but when they become popular they attract visitors from other States, and after the initial diagnosis and treatment, it is profitable for the operators to have their patients continue with home medication.

The Supreme Court has recently refused to review two circuit court opinions upholding the proposition that articles come under Federal jurisdiction when they are delivered with knowledge that they are to be transported to out-of-State places. Another circuit court ordered an injunction against shipments by one of the most notorious cancer sanitarium operators, and on February 2 the Supreme Court denied his petition for certiorari.

Only last month an "herb doctor" was sentenced to a year in jail for his false and misleading cancer cure claims. In this case, as in the others, we brought pitiful case histories to the courtroom showing the irreparable harm caused by mistaken reliance on the nostrum. In the "herb doctor" case a physician testified that he had recommended an operation when his patient's cancer was still operable. Instead she had turned to the herb treatment and at the time of the trial was on her death bed.

We are not through with the war on cancer quacks and their victimization of the American public. Investigations are coming to a conclusion in several other cases, which we shall make every effort to crown with equal success.

A Nation-wide survey last summer uncovered 177 cases of serious blood disorders and fatalities associated with use of the antibiotic chloramphenicol. We asked the National Research Council to evaluate these cases. On the recommendation of a special committee of the Council distribution of chloramphenicol was continued under revised labeling which cautions physicians against unnecessary risks.

The Council also recommended that further study of serious reactions to this and other drugs be promoted. A new drug hailed as "miracle" or "wonder" may reach millions of people within a short time. This gives emphatic point to two questions: Will reactions parallel those of patients in the carefully controlled clinical tests made to establish safety before the new-drug application was submitted? Will use of the drug be limited to conditions for which it has been shown suitable, or will there be "shot gun" administration for minor infections or conditions entirely outside its known range of efficacy?

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Many of the fatalities in the chloramphenicol cases were tragically unnecessary because of irrational and indiscriminate use—in some cases by persons who had access to supplies, such as hospital attendants, and in others on bona fide prescriptions. The same situation has existed for other antibiotics, sulfonamides, and other potent drugs.

Valuable new drugs should not be withheld from the market because there may be this type of misuse, but we do need strengthened educational efforts to minimize the potential harm. We need also increased facilities to obtain more completely the information available in the records of hospitals and clinics on the nature, severity, and incidence of drug injuries. The published literature and the incidental cases which are reported to us are insufficient for a clear picture, and there is now no agency, governmental or otherwise, that systematically collects and compiles this information.

Studies of potential danger should not be confined to drugs. There are new therapeutic devices being distributed today, and others under development, of which not enough is yet known to assure safe use. We are at present very much concerned about radio-active devices and ultrasonics. As a minimum control measure, these should not only be restricted to persons capable of using them without causing damage, but accurate equipment for measuring output of emanations or vibrations should be available so that the experts can control dosages and evaluate the efficacy of the treatment. We have added to our staff a physicist who, with our medical officer, has been receiving the generous cooperation of specialists in these fields.

The Growth in Cosmetics

(Continued from page 331)

with the original houses to definitely establish the safety of the product. Now a cosmetic company which markets its products through all types of outlets is bringing this product on the market for general distribution at a price which is at least one-third of the price at which the product is sold by the houses already marketing it.

Within the past two decades, the cosmetic manufacturing business has shifted to an almost scientific basis. Within that period of time, all leading cosmetic manufacturers have scientific staffs headed, for the most part, by PhD.'s. The scientific staffs of these companies are actively engaged not only in control of the raw materials, processes, and finished products of their companies, but also in research. And this research is directed toward the improvement of products and processes, discovery, examination, and formula testing of new raw materials, as well as toward the discovery of entirely new type products. The shift to a scientific basis is emphasized by the great growth and interest in the Cosmetic Chemists Association and the Scientific Section of the Toilet Goods Association which have come into being during that period of time.

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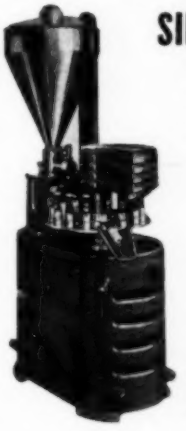

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This scientific activity within the industry has eliminated a very large part of the mystery which used to surround the formulation and production of cosmetics. It has brought much light to formerly dark areas of cosmetic knowledge. Chemical companies who have discovered products which they have established as most useful in the formulation of cosmetics have had much to do with increasing the general share of this knowledge.

The great increase in the scientific aspects of cosmetic formulation, control, and processing in cosmetics have not only made possible the development of improved cosmetics and new type cosmetics, but it has also made possible the production of high quality products at lower prices. The production of high quality products at low prices is mainly responsible for the great growth in this industry even when the industry is burdened with a twenty per cent retail tax. For low prices for fine products had made possible the use of many types of cosmetics by more and more women of this country.

Patent Thoughts and Trends

(Continued from page 381)

Same—issued April 13, 1939, to Clarence Walter Wilson, Norco, California, assignor to California Fruit Growers Exchange, Los Angeles, California.

The point of this patent is to provide dried lemon juice which does not form a sticky mass when exposed to moisture.

The process by which this is accomplished is shown by Claim 2 which is reproduced here:

> In a method of preparing a new composition of matter, the steps of mixing borax with lemon juice, allowing any cloud present to settle, removing the slurry, adding boric acid to the clarified juice, drying the mixture, adding boric acid moistened with water, then drying in a current of warm air, whereby there is produced a dry, stable product having a brilliant lemon yellow color.

U. S. 2,261,623—Fingernail Enamel—issued August 16, 1938, to Robert T. Hucks, South River, N. J., assignor to E. I. du Pont de Nemours & Company, Wilmington, Delaware.

When pigmented enamels became the vogue it was found that they were subject to certain undesirable characteristics, among which were the tendency of the pigment to settle and form a hard cake at the bottom of the container, dye segregation near the surface of the liquid, decrease in opacity and the formation of an undesirable brown color.

The du Pont inventors claim to have overcome these disadvantages by using a lake pigment comprising small particle size zinc oxide as the substratum in cellulose nitrate finger nail enamels.

The lake pigment is prepared by chemically precipitating a suitable dye on a substratum consisting of a special zinc oxide pigment distinguished from the commonly used zinc oxide by its relatively small particle

size, the diameter of the individual particles averaging about 0.15 micron and the diameters of substantially all of the individual particles coming within the range of about 0.12 to 0.18 micron.

Claim 1 is illustrative:

> A non-settling and non-segregating opaque finger nail enamel composition comprising cellulose nitrate and a lake pigment consisting of zinc oxide having an average particle size between 0.12 and 0.18 micron and a dye chemically precipitated thereon.

RECENT PATENTS

2,621,206—**Ciba—Isomerization of 1-keto-2-Alkyl-Octahydrophenathrene - 2 - Carboxylic - Acid Esters.**

2,621,208,10—**Ciba — Hexahydrophenanthrene Carboxylic Acid Esters and Esters.**

2,625,501—**Injectables Research Corp.—Long-Acting Morphine Injection.**

2,625,543—**S. L. Ruskin—Penicillin Histidine.**

2,625,544—**U. S. A.—Preparation of Ammonium Penicillin.**

2,625,545—**Upjohn—Steroid - Aldehyde Cyanohydrins.**

2,625,546—**Upjohn—3,20-Diacyloxy-5,7,9 (11), 17, (20)—Pregnatetraene Adducts.**

2,625,548—**G. D. Searle & Co.—Basically Substituted 1-(10 Acridanyl) Alkanones.**

2,625,549—**Am. Cyanamid—Synthesis of 3-[Beta-Keto - Gamma - (2 - Piperidyl) Propyl] - 4 - Quinazolones.**

2,625,556—**Upjohn—Oxidation of Steroid Alcohols.**

2,625,562—**Upjohn—N - Ketoalkyl - p - Aminobenzoates.**

2,625,564—**Merck—Resolution of Isoamidone with (LM)-p-Nitrobenzoyl-Glutamic Acid.**

2,625,565—**Parke, Davis—Preparation of Thio-Alkyl Pantothenamides.**

2,625,566—**Upjohn—Beta - (Ortho - Methoxy) Phenyl-Isopropyl Benzyl Alkyl Amines.**

2,625,567—**Upjohn—1 - Benzyloxy - 2 - Alkylaminoindanes.**

2,626,257—**Johnson & Johnson—Medical Dusting Powder.**

2,626,258—**Eaton Labs.—Series of Nitrofuran Compounds comprising the Acyl Hydrazone Ammonium Salts of 5-Nitroacyl Furans.**

2,626,259—**Imperial Chem. Industries—1,4-Quinoxaline-DI-N-Oxides.**

2,626,260—**Sterling Drug—Nitrobenzisoxazoles.**

2,626,261—**Sterling Drug — Nitrotertiaryaminobenzonitriles.**

2,626,263—**Ayerst, McKenna & Harrison Ltd.—5-Gamma-Hydroxypropyl Hydantoin.**

2,626,888—**Merck & Co.—Vitamin B_{12}-Active Substance Elution from Montmorillonite Absorbents.**

2,626,947—**The Upjohn Co.—Decolorization of Synthetic Folic Acid.**

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2,626,948—**Hoffmann-La Roche—1 - Alkyl - 2 or 4 - [(N - Alkyl - N - Beta - Dialkylaminoalkyl) Aminophenethyl] Piperidines.**

2,626,960—**Hoffmann-La Roche—1,4 - Dioxo - 5 - (Nitrophenyl) 1,4,4a,5,8,8a - Hexahydro - Naphthalenes.**

2,627,491—**Wyeth, Inc.—Penicillin Salts of Substituted Alkylene Diamines.**

2,627,493—**Wallace & Tiernan Prod.—Fluorine Chewing Gum Process.**

2,627,494—**Commercial Solvents—Production of Bacitracin.**

2,627,517—**G. D. Searle—Basically Substituted 10-Phenothiazine Carboxamides.**

2,627,518—**Sterling Drug—1 - (2 - N - Piperidinoethylamino)-4-Methylthiaxanthones.**

2,627,938—**Research Products Corp. — Cosmetic Bases Containing Petroleum Oil and Polyethylene as Thickening Agents.**

2,628,163—**Monsanto — Herbicidal Compositions Containing Mucohalogen Acids and Salts.**

2,628,182—**Mizzy, Inc. — Benzocaine Anesthetic Solution.**

2,628,184—**R. R. Widmann—Composition to Decrease Circulation of Blood and Lymph in Vascular and Allergic Disorders. (Tyrosine and pyridozine).**

2,628,185—**M. J. Lewenstein—Analgesics.**

2,628,186—**Research Corp.—Carboxylic Ion Exchange Resin Purification of Vitamin B_{12}.**

2,628,187—**Research Products Corp.—Medicinal Mineral Oil Vehicle Thickened with Polyethylene.**

2,628,227—**Eastman Kodak—Water-Soluble Complex of Vitamin E and Plasma Proteins.**

2,628,233—**Luxema (Belgium)—Substituted and Unsubstituted Barbiturates and Thiobarbiturates of 1,2,3,-Trisubstituted Pyrazolones.**

2,628,235—**Burroughs Wellcome — 8 - Arylpurine Derivatives.**

2,628,236—**Burroughs Wellcome—5 - Benzyl - 24 - Diamino-6-Alkylpyrimidines.**

2,628,237—**Hoffmann-La Roche — Alkali Metal Salts of Isonicotinylhydrazinomethanesulfinic Acid.**

Air Conditioning at Lilly

(*Continued from page 333*)

two Indianapolis plants easily meets these standards. Since 1945, they have installed a number of chemical absorbent-type dehumidifying units in combination with refrigeration cooling equipment to accomplish this purpose.

Lilly, one of the world's largest producers of pharmaceuticals has a tremendous plant investment which it can ill-afford to jeopardize by means of slumping or increased-cost production. To protect this investment, this 76-year-old firm has sought an air conditioning system which would help to increase its production of antibiotics, pharmaceuticals, and biologicals, while,

at the same time, provide a lower unit cost. And production of some 1300 different drugs entails a diversity in all plant operations, including the requirements from the air conditioning equipment.

Hygroscopic Pharmaceutical Processing Operations

The pharmaceutical industry is a rapidly changing one; products are continually being superseded by others possessing new or improved therapeutic effects. These products range from tablets and tiny capsules to liquids bottled in one-gallon containers. In general, pharmaceutical production activities can be subdivided roughly into the following manufacturing units:

(a) Tableting operation;

(b) Ointment departments;

(c) Elixirs and other bottled liquid preparations unit;

(d) Ampoule and vial or parenteral solution department;

(e) Facilities for bulk powder filling for encapsulator other techniques dictated by specialty products.

Of these general manufacturing subdivisions, only the ointment departments escape the problems caused by high humidities. Capsule manufacturing, dry product filling, and tablet manufacturing, coating and bottling are several of the important processes requiring controlled temperatures and humidities.

The first step in manufacturing a pharmaceutical powder is the granulation process, in which the various medicinal ingredients are milled into a granular material. The dry granulation is then screened, blended and lubricated. This granulation is placed in rotary die-compression machines which press out thousands of identical tablets every minute.

The tablets are coated and dried in revolving coating pans, illustrated in Figure 1. This coating consists of several thin layers of powder and syrup tediously applied over several days' time. After inspection, these coated tablets are then carefully packaged in bottles or boxes.

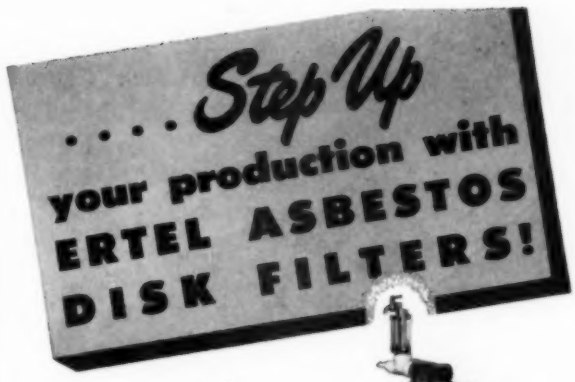
Capsule Manufacturing

Certain powdered medicinals are filled into hard shell gelatin capsules on automatic filling machines. Thousands of gelatin capsules are produced every day by a large, special, automatic machine, shown in Figure 2. A 100 per cent inspection of the completed capsules occurs prior to the filling operations.

Liquid material may be enclosed in an elastic gelatin covering by an especially built encapsulating machine (see Figure 3). The finished product, called a "gelseal" by Lilly, protects the potency of the drug.

Processing Problems with Moisture-Sensitive Drugs

These powders, pharmaceutical and antibiotic, are very moisture-sensitive. Absorption of moisture by these drugs results in clogged filling machinery and an inconsistent product. Even should a pharmaceutical



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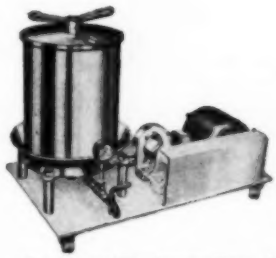

2. ECD MODEL ENCLOSED DISK FILTER

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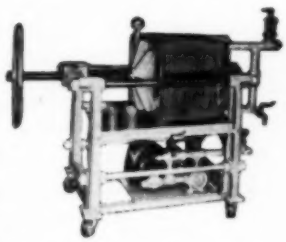

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manufacturer market a moisture-heavy product as results from excessive humidity, its sales appeal would definitely be lowered by the lumpy and discolored appearance of the powder.

Under high humidity conditions, gelatin capsules do not dry and set sufficiently, creating difficult handling and filling operations. In too dry an atmosphere, they become hard and brittle. Tablets, during the coating process, must dry before moisture is absorbed. If these dried tablets were allowed to absorb moisture during the bottling operation, an attendant bottling problem would occur due to stickiness. Too, the tablets would lose their high gloss.

Tablet Granulations and High Humidities

Tablet granulations, in most cases, are found to compress best when they contain from 1-3 per cent moisture. Screening and blending operations, by their very nature, cause extreme surface exposure of granules to the atmosphere. It is during these operations that moisture may be absorbed into the granules, causing subsequent difficulty in compressing. The compressing operation may encounter difficulty on a slightly moist granulation due to sticking of some granules in dies or on punch faces.

The compressing room should certainly be air conditioned. The punches and dies which are used in forming the tablet are fabricated of tool steel and are highly polished. The effect of moisture on these is to cause rapid corrosion, dulling and pitting the faces of these punches and dies. The savings to be realized in prolonging the life of these pieces is an important economic consideration.

Low Humidity Conditions Maintained at Eli Lilly

Figure 5 is a table of those conditions determined by Lilly to be optimum for the various operations stipulated in their Kentucky Avenue plant. The Kathabar

PROCESS ROOM	AIR TEMP.	R.H.	KATHABAR EQUIPMENT INSTALLED (Fresh air conditions (max.): 100°F, 50% R. H.	
Gelseal" manufacturing	80°F	22%	2 11000 cfm capacity air washers 1 Solution regenerator	1947
Penicillin tablet mfg.	80°F	15%	1 17,500 cfm capacity air washer 1 Solution regenerator	1947
Gelatin capsule filling	78°F	25%	1 17500 cfm capacity air washer 1 Solution regenerator	1947
"Pulvule" dusting, sorting, trituration	78°F	25%	2 17,500 cfm capacity air washers 1 Solution regenerator	1947
Antibiotics filling	80°F	15%	2 12,500 cfm capacity air washers 1 Solution regenerator	1949
Dry products filling	78°F	25%	2 12,500 cfm capacity air washers 1 Solution regenerator	1949
"Enseal" manufacturing	65°F	35%	1 12,500 cfm capacity air washer 1 Solution regenerator	1949
Gelatin capsule mfg., sorting, boxing	75°F	38%	1 12,500 cfm capacity air washer 1 Solution regenerator	1951

FIGURE 5

humidity conditioning system, pictured in Figure 4 and manufactured by Surface Combustion Corporation of Toledo, Ohio, employs chemical absorption of moisture from the air to obtain the desired low humidity and refrigeration cooling for temperature control. All

of this equipment has been installed in this plant since operations were begun there in 1946.

Dehumidifying Equipment Operation

This chemical absorbent-type dehumidifying equipment uses a very hygroscopic solution, consisting chiefly of a lithium chloride base. This solution is sprayed into a chamber, called an air washer, through which passes the air to be conditioned. Upon contact with the absorbent, the air loses a controlled amount of its moisture.

Control of the degree of dehumidification is determined by the temperature and amount of cooling medium flowing through coils in the air washer, over which the air and solution pass. The moisture absorbing property of the absorbent is inversely proportional to its temperature. The cooler the solution, the more moisture it is capable of absorbing. Cooling mediums may range from cooling tower water to extremely low temperature refrigerants.

Operation of the equipment is continuous and entirely automatic. Regeneration of the moisture-laden absorbent is accomplished in a separate regenerator chamber, where the solution passes over low pressure steam coils. Here the excess water in solution is driven off and then exhausted to the outdoors by a scavenger air stream. The reconditioned solution is then returned to the air washer chamber at full strength, ready for another dehumiidfying pass.

Depending upon the temperature and quantity of the cooling medium used in the air washer chamber, a certain amount of air temperature reduction is accomplished directly. Sometimes it is necessary to employ separate refrigeration after-cooling in this type system, however, to attain final air temperature control.

Use of this equipment, Lilly firmly believes, satisfies the 4-point specifications set forth at the beginning of this article.

Chlorophyll in Internal Medicine

(*Continued from page 329*)

TABLE I

Test Samples	*Magnesium Chlorophyllins 100 Per Cent*	*Quantity of Sample*	*Intensity of Odor Garlic Salt (12 Hrs.)*	*Onion Salt (1 Hr.)*
Group I				
1	0 mg	100 mg	—	—
2	5 mg	100 mg	—	—
3	20 mg	100 mg	0	0
Group II				
1	0 mg	50 mg	—	—
2	5 mg	50 mg	00	00
3	20 mg	50 mg	00	000
Group III				
1	0 mg	25 mg	—	—
2	5 mg	25 mg	00	0000
3	20 mg	25 mg	000	Trace

(*Continued on page 404*)

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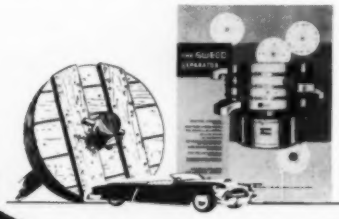

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TABLE I

(*Continued from page 403*)

Test Samples	*Magnesium Chlorophyllins 100 per cent*	*Quantity of Sample*	*Intensity of Odor Garlic Salt (12 Hrs.)*	*Onion Salt (1 Hr.)*
Group IV				
1	0 mg	10 mg	0000	0000
2	5 mg	10 mg	0000	0000
3	20 mg	10 mg.	0000	0000

Deodorant Properties in Vivo: During a study done to determine the hemopoetic value of magnesium chlorophyllins in hypochromic anemia, the deodorizing effect upon the human urine was observed that prompted these subsequent experiments. The fact, since observed by others, that Vitamin B, and asparagus odors usually present in urine, were greatly decreased by ingested magnesium chlorophyllins, proved that some change in the metabolism of these compounds was taking place in the body. This effect must therefore be due to either a) unchanged chlorophyllins being excreted in the urine where action could take place in the bladder, b) catabolic changes in the digestive tract whence the waste products are picked up by the blood and excreted via renal tubules to the bladder, c) at the sites of the individual cells where the metabolic process of nutrition takes place and where waste products are formed. The digestive action alone could not account for the perspiration deodorization which takes place locally and the first premise would necessitate rather large amount (10 to 20mg) to be present in the bladder at any one time to be effective and this has not been true in our studies. I conclude therefore that its action must be in the cellular tissues themselves and the source from a blood or lymph supply of chlorophyllins.

Method of Measurement: Clinical measurement of odors has always been hard to record in exact degree by any known technician not open to human error and variation. However there is a universal acceptance of certain characteristic ordors and it is not difficult for the average person to tell when these are present and to a fairly accurate quantitative degree such as scarcely detectable, moderate, strong, and very strong. People who practice analyzing odors can become quite accurate even to the point of breaking them down into their component basic ingredients. For our purpose of determining degrees of odor, we chose the air dilution technique of the Fair and Wells osmoscope. We used the arm pit for a standard body odor area, and the mouth for breath odors.

The intensity of the odor which employs the air dilution method is determined by the figures on the side of the Osmoscope. They represent the pO values. If no odor is noticeable in the six position, but odor can be detected in the five position, the pO value is five. If no odor can be detected in the one position, but odor can be sensed in the zero position, the pO is zero. The concentration of odor producing constituents for a pO

reading of five is 32 (2^5 equals 32); for a pO reading of zero it is one (2^0 equals 1). If no odor is detectable in the zero position, the substance is odorless and has no pO or odor intensity.

Thus the actual readings can be done starting at zero which means 100 per cent air coming from the test area or at six which means the strongest dilution of odor possible with air coming in through the side holes. Readings for underarm odor were obtained by putting the distal end of the osmoscope directly in the armpit with the subject's arm held at about 45 degrees with the hand on the hip. This made an effective cup, preventing normal air from entering the mouth of the osmoscope. Customary hygienic habits were to be continued by each individual with only one stipulation—that a plain white unscented soap be used for washing and bathing. Clean underclothes were requested for each testing period so that no accumulated underarm odor would be carried by the undergarments.

Breath Deodorization: Onion was selected as the test odor for breath, because of its universal use and its disagreeable effect on the companions of the users. Twelve subjects were used and doses of onion ranging from one 1/8″ by 2″ slice to one teaspoon of grated onion or onion juice was given to each subject. The solid onion was chewed with bread and the onion juice swished about the mouth before swallowing. After 15 minutes the magnesium chlorophyllin tablets in doses of 65 mg to 200 mg were chewed and held in the mouth for about 3 minutes before being swallowed. Osmoscopic readings by two physicians, two nurses, and two medical technicians were recorded independently and an average reading is reported. Readings were done 30, 60, and 120 minutes after the chlorophyllins were taken. The results may be summarized as follows:

1. When onion is chewed, then swallowed, the specially prepared chlorophyllin tablets, chewed fifteen minutes later, cause an immediate cleansing of the breath, but the odor of onion returns as soon as residual particles of onion remaining in the teeth crevices are digested and release more volatile oils.

2. When onion juice was used and no particles remained in the teeth to produce later (decay) decomposition products, the odor was barely detectable by direct smelling after two hours in one case, absent in four, and definitely present in seven cases.

3. A similar study was made, but a mouth wash of the specially prepared chlorophyllins in solution was used immediately after taking onion juice. Results were more satisfactory and showed an immediate decrease in odor with osmoscopic readings from 64 to 8 after five minutes.

Systemic Body Deodorant Properties: The preliminary tests on perspiration odors were observed on persons with medical and nursing training so that a most critical evaluation could be made. Their individual interpretations ran reasonably constant. These six then successively took increasing doses of Westcott-treated magnesium chlorophyllins each morning after

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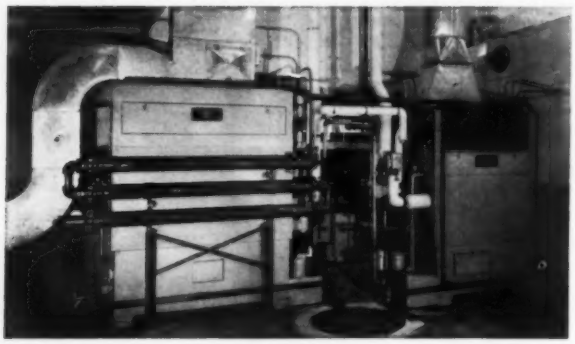

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their bath, and clean clothes were used each day. Osmoscopic reading were taken every 24 hours and showed from 56 per cent to 90 per cent decrease over the control.

EFFECT OF SPECIALLY PREPARED CHLOROPHYLLINS ON UNDERARM ODOR

	Dose (mg)	*Hour*	*Average Osmoscopic Readings at 4 p.m.*
Case 1			
Control	0		16
1st day	65	9 am	4
2nd day	65	9 am	4
Case 2			
Control	0		32
1st day	65	9 am	16
2nd day	65	9 am	4
3rd day	65	9 am	1
Case 3			
Control	0	9 am	16
1st day	65	9 am	4
2nd day	65	9 am	4
3rd day	65	9 am	1

No control cases with placebos were used because every person was studied before and after the use of chlorophyllins; and thus served as better controls than separate cases could with the variability of personal odors being so great. Throughout all these studies the question of controls has been handled in the same manner.

In order to cover as many phases of society as possible we selected 130 cases as follows:

12 college girls (4 colored)
20 college athletes in active sports
15 manual workers
10 executive workers
20 sick patients with specific problems of odor
53 self appraised reports from voluntary users.

Chart 1: 12 college girls

Montgomery and Nachtigall[13] in testing athletes and industrial workers observed striking effectiveness in oral doses from 100 to 200 mg daily.

Since 1950 I have accumulated many case reports which also confirm our claims.

Case reports: 1) Brain abscess from Walker files
2) Urinary incontinence
3) Menstrual odor

Reports from other sources tend more and more to confirm these original and supplementary findings *when the proper preparations and doses are used.* Independent workers have repeated our tests and devised many others to test the efficiency of these chlorophyll derivatives.

Taber[14] using a copper derivative which we have found less effective than ours reports that in doses of 200 mg daily women who were troubled with menstrual odors were relieved in over 50 per cent of cases.

Tebrock[15] also using a copper salt found that 80 per cent of the employees in a large manufacturing plant were relieved of personal odors. This latter study

was a subjective "report by individuals" however and is open to the same criticism as all subjective reports are as Tebrock himself admits.

Dijkstra[16] at the University of Grenengen, Holland, reports that chlorophyllin tablets taken internally were most effective in relieving the stench of ozena due to atrophic rhinitis and sinusitis.

LeVann[17] in a comprehensive study proved that whole hospital wards could be effectively freed of patient odor by the oral use of these same magnesium chlorophyllins.

Enteric Chlorophyllins: Weingarten and Payson[18] observed gratifying results in giving colostomy patients oral chlorophyll. Ada[19] was able to get very satisfactory results with doses of 100 to 300 mg when using enteric coated magnesium chlorophyllins. In emphasizing the value of enteric magnesium chlorophyllins for colostomy and pelvic evisceration patients, Ada noted that patients were more willing to undergo this depressing operation knowing that the stool and gas odors would be controlled. His preliminary observations indicate that about 85 per cent of patients are satisfactorily controlled.

Anti-allergic Uses: Several years ago patients with allergic rhinitis reported a decrease in sneezing and nasal congestion when taking chlorophyllins for other purposes. This effect seemed very logical in view of the known tissue stimulating capacity of these products so a specific study was undertaken. In 1947, 50 cases of allergic rhinitis were successively put on four other known remedies for this disorder. The effectiveness of magnesium chlorophyllin by itself is evident by comparing it to the other drugs.

TABLE III

60 per cent satisfactory relief from Benadryl (50-150 mg)
60 per cent satisfactory relief from Cortalex (150-300 mg)
55 per cent satisfactory relief from Magnesium Chlorophyllin (100-300 mg)
50 per cent satisfactory relief from ascorbic acid (300-5000 mg)
25 per cent satisfactory relief from potassium chloride (15-30 grains)

In view of its value as shown above and its freedom from disagreeable side effects, it was thought advisable to improve its effectiveness by addition of other non-toxic and helpful ingredients. In successive years the following substances were added and wherever possible the same patients were treated with the new formula. They did not know that new drugs had been added so that psychological factors were minimized.

In 1943, 36 cases were treated with chlorophyllins and calcium gluconate. In 1949, 33 cases were treated with Vitamin C added to the formula and 33 other cases treated by injection and anti-histamines were used for controls. In 1950-51 ephedrine sulphate in small 3/8 gr doses was added and 60 cases were treated. In 1951-52, 45 private and clinic patients were given

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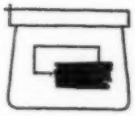

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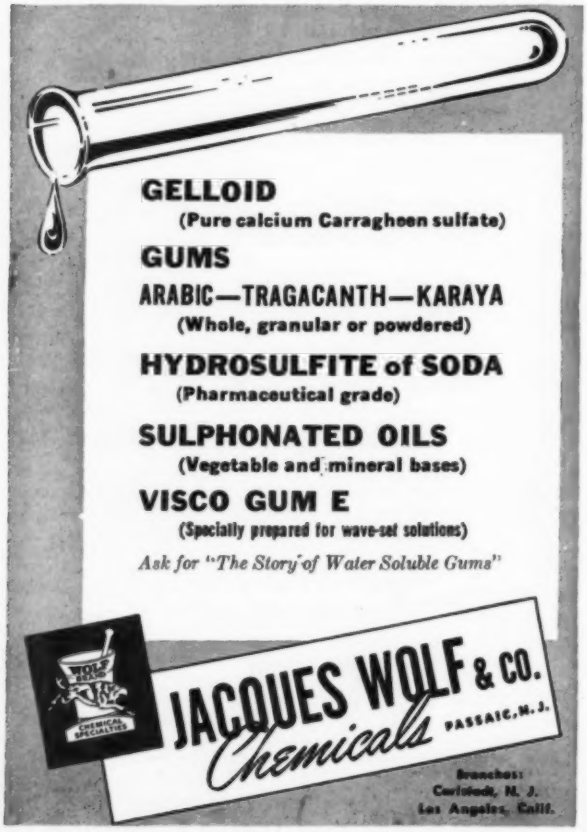

the same prescription and 10 others given plain chlorophyllins for comparison with 1947 results.

Table IV—Chlorophyll treatment for hay-fever shows the first three years' results.

The current year's study shows approximately the same results and 50 per cent of the plain chlorophyllin cases showing beneficial effects. The preliminary summary of this work was read[20] at the International Congress of Allergy in Zurich, Switzerland and at Triest, Italy in 1951 and further reports are being prepared now to emphasize this new and valuable use for a physiologically active chlorophyll.

Offenkrantz[21] in 1951 reported the healing value of a powder containing chlorophyll in the treatment of peptic stomach ulcers. The experience of my associates and myself while limited to about 15 cases has been very favorable and preparation for a more extensive and intensive study are under way now. My greatest hope is that these reports will stimulate others to study the therapeutic possibilities of these intriguing substances and my sincerest wish is that my claims will not be exaggerated, or misrepresented to the public in the hope of a new cure-all for the disorder discussed.

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Waterless Hand Cleaners

(*Continued from page 327*)

Some of the cleaners of this class consist essentially of solvents gelled or thickened with soap or other agent. For example, one waterless hand cleaner has been described[6] as consisting of ammonium oleate dissolved in naphtha; enough soap being present to give a jelly-like consistency to the compound. The resulting product is suitable for packaging in collapsible tubes.

Quite different is a liquid preparation developed by Lenoble[7] in which a plasticized resin is used in combination with the solvent. According to his patent, such a cleaner may consist of:

Polymerized methyl methacrylate	**5.0 per cent**
Butyl phthalate	**15.0 " "**
Solvent (benzene, toluene or trichlorethylene)	**80.0 " "**

However, many of the solvent type waterless cleaners are provided in the form of emulsions, thus providing a more rounded cleansing action. A wide range of raw materials, including many new substances, may be used in the formulation of these cleaners. Data on the preparation of suitable emulsions are given not only in technical and patent sources, but in manufacturers' literature. Thus, the latter source[8] provides the following formula for a waterless hand cleaner:

Kerosene, deodorized	**65.0 per cent**
Polyoxyethylene sorbitan trioleate (Tween 85*)	**5.0 " "**
Polyoxyethylene sorbitan monoleate (Tween 80*)	**15.0 " "**
Water	**15.0 " "**

(*Atlas Powder Co., Wilmington, Del.)

Mix the first three ingredients and heat to 40° C., then add the water with moderate agitation.

Also indicative, but fairly simple, is the following formula:[4]

Solvent (Sovasol No. 4*)	**100 parts**
Oleic acid	**14 "**
Triethanolamine	**6 "**
Water	**60 "**
Ammonia (28 per cent)	**5 "**

(*Socony-Vacuum Oil Co., New York, N. Y.)

In a consideration of the factors involved in producing a satisfactory waterless hand cleaner, one British authority[9] suggested that a superior product could be made along the following lines:

Mineral spirits	**40 parts**
Oleic acid	**10 "**
Triethanolamine	**5 "**
Butyl cellosolve	**5 "**
Propylene glycol	**5 "**
Water	**35 "**

Mix the oleic acid with 10 parts of the solvent and stir to obtain a uniform solution. Then add the triethanolamine and stir until the solution clears. Incorporate the balance of the mineral spirits with continuous stirring. Finally add the water and the glycol and stir until a smooth creamy product is formed.

The recent patent literature[10] offers an example of a waterless detergent in which a so-called mineral terebinth essence serves as the solvent. This is a petroleum hydrocarbon fraction having a boiling range of 130 to 190° C. and a specific gravity of 0.77 to 0.825. Its use is illustrated in the following general formula:

KOMMON SCENTS!

The question of pensions for ex-Presidents of the United States bids fair to persist through another National Administration. To date, history seems to reveal that only active Presidents' friends succeeded in getting paid without working.

●

Ike's "Get Tough" policy with European nations that show more talent for borrowing money than lending a hand for defense should change shortly. The French, who used to criticize all Americans, are now concentrating on American Republicans.

●

Internal government problems appear to be lending themselves to more rapid solution. On FEPC, for example, a compromise has been worked out that will give each side what it wants. This is accomplished, actually, by giving nothing to anybody, especially those citizens who need an FEPC.

●

The Republican Party seems divided on the priority of reducing taxes or balancing the Federal budget. A feller named Stalin, meanwhile, has it in his unfortunate power to keep the budget unbalanced and cause an increase of American taxes.

●

The Nation's new devotion to the First Lady has beauticians featuring coiffeurs with bangs and obstetricians suggested that all female infants be named Mamie. Ironically, the President's wife probably gets her biggest enjoyment from the fact that her husband finally has a job that keeps him home nights.

●

The frustration of Senator Taft, seeking a return to the White House where his daddy was once boss, is being relieved slightly. The Senator finally has the opportunity to visit the President's mansion as often as he likes—to hear the President say, "No!" to a Taft suggestion.

●

The auspicious beginning of the new National Administration has the Cosmetic Industry more amused than amazed. For awhile it looked as though the Republicans would spend the next four years apologizing for the inter-party name-calling initiated at the Chicago Convention.

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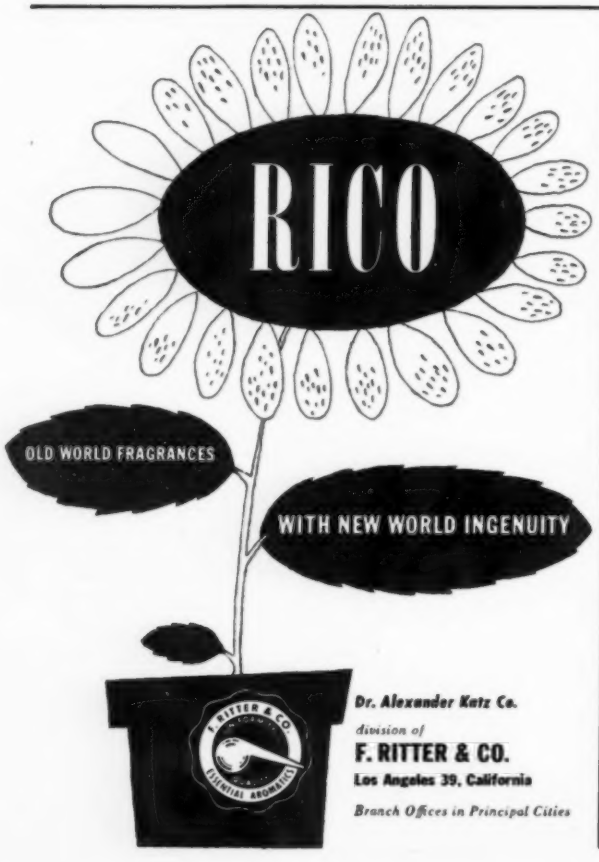

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Oleic acid	**15-25 parts**
Ammonium hydroxide (10 per cent)	**5-12 "**
Sodium hydroxide (20 per cent)	**4-6 "**
Mineral terebinth essence	**100-120 "**
Water	**10-20 "**
Glycerine	**1-3 "**

Another, more elaborate preparation makes use of a more familiar solvent, but takes advantage of the properties provided by some of the newer raw materials. This is illustrated in the following formula for a waterless hand cleaner, as provided in one manufacturer's literature:[11]

Polyethylene glycol 600 monostearate	**6.0 per cent**
Stearic acid	**4.0 " "**
Preservative	**0.1 " "**
Kerosene	**50.4 " "**
Polyethylene glycol 300 destearate	**6.0 " "**
Water	**27.0 " "**
Triethanolamine	**6.5 " "**

Heat the first five ingredients together to 50° C. Heat the water and triethanolamine to the same temperature and add to the previous mixture, with stirring. Allow to cool to 45° C. and add a suitable perfume. Continue stirring to below 40° C. If desired other solvents may be used in place of part of the kerosene to give a stronger cleansing action.

Deodorized kerosene also serves as the solvent in a waterless hand cleaner in a formula given in one of the standard reference texts.[4] The cleaner is made in two steps, the following base being prepared first:

Monoethanolamine	**7.8 parts**
Polyethanolamine	**10.9 "**
Oleic acid	**28.0 "**
Kerosene deodorized	**48.0 "**
Water	**5.3 "**

The final product is prepared by mixing 12 parts of of the above base with 70 parts of deodorized kerosene and 18 parts of water.

Some waterless hand cleaners, made without solvents are very similar to cosmetic cleansing creams or lotions both in composition and action. Thus, a rather elegant preparation may be made from:[5]

A.

Glyceryl monostearate	**1.75 oz.**
Sodium hydroxide	**2.50 oz.**
Water	**3.00 qt.**

Heat to boiling.

B.

Stearic acid	**2.50 oz.**
Mineral oil	**2.50 oz.**
Paraffin wax	**11.50 oz.**
Spermaceti	**7.00 oz.**
Perfume	**0.20 oz.**

Heat on a water bath until all is melted. Pour solution B into solution A, with constant stirring, until cold.

Kleinicke's procedure for making waterless hand cleaners is claimed to yield products that will not injure or roughen the skin, but rather will leave it soft and clean. The cleaner, made available in the form of a creamy, viscous liquid or light cream which may be packaged in bottles, tubes or jars, depending on the particular consistency, is prepared as follows:

Diethyleneglycol stearate	**7.0 parts**
Diethyleneglycol laurate	**7.0 "**
Stearic acid	**6.0 "**
Mineral oil, white	**1.0 part**
Diethylene glycol	**5.0 parts**
Water	**70.0-350.0 "**

The thickening action, film-forming properties and other characteristics of various cellulose derivatives are utilized in the formulation of improved waterless hand cleaners. For example, methyl cellulose is a major ingredient of the following well-rounded, emollient product:[13]

Methyl cellulose (4000 cps.)	**14.3 parts**
Alcohol	**5.5 "**
Lanolin	**0.3 "**
Glycerine	**5.5 "**
Menthol	**0.1 "**
Propyl para-hydroxybenzoate	**0.3 "**
Distilled water	**74.0 "**

Solution of the cellulose is effected after dissolving the hydroxybenzoate in the water. The alcohol, glycerine, lanolin and perfume are then incorporated. The product must be worked to perfect homogeneity. When used as a cleanser, the paste is rubbed into the hands until it falls off dry.

Carboxymethyl cellulose, commonly known as CMC, is also a useful component of waterless hand cleaners. Its use is illustrated in the following formula[8] for making a product of the jellied detergent solution type:

Polyoxyethylene sorbitan monooleate (Tween 80*)	**6.25 per cent**
Sorbitan sesquioleate (Arlacel C*)	**1.26 " "**
Propyl-para-hydroxybenzoate	**1.00 " "**
Sodium carboxymethyl cellulose (high viscosity)	**2.50 " "**
Water	**89.00 " "**

(*Atlas Powder Co., Wilmington, Del.)

Dissolve the CMC and benzoate in the water. Add the mixture of the oleates with vigorous agitation. Perfume and color as desired.

CMC is used with a Carbowax compound (Carbide & Carbon Chemicals Corp., New York, N. Y.) and other materials in the following more complex, but easily prepared waterless hand cleaner:[8]

Polyethylene glycol (Carbowax 1500)	**20 parts**
Wetting agent (Ultrawet*)	**8 "**
Sodium pyrophosphate	**4 "**
Carboxymethyl cellulose	**6 "**

(*Atlantic Refining Co., Philadelphia, Pa.)

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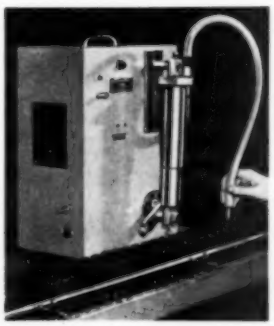

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Lanolin	5 parts
Glycerine	5 "
Dioxane	20 "
Water	32 "
Perfume	sufficient

The components are mixed in a high speed stirrer in the following order: CMC, water, Carbowax, wetting agent, pyrophosphate, lanolin, glycerine and dioxane.

The film-forming and other properties of polyvinyl alcohol or PVA have long been of interest to formulators of waterless hand cleaners. Before the war, tubes of polyvinyl alcohol solution were sold in Germany and proved very popular with mechanics and motorists.[2] In England, Collier[14] suggested the use of a 10 per cent aqueous solution of PVA as a hand cleaner. The material is rubbed into the dirty hands, and within a short time it starts to peel off; carrying the grime and grease with it.

Quite recently, in reviewing the uses of polyvinyl alcohol in cosmetics and pharmaceuticals, Ruemele[15] discussed its role in the production of waterless cleaners. He pointed out that PVA is said to be harmless to the skin and not to leave a dry or sticky residue on it. He also noted that fat-soluble substances may be included with PVA to enhance its cleaning action, but this, he felt, was not really necessary.

Of course, polyvinyl alcohol may be used with other materials to provide improved cleaners. An example of such utility is offered[9] in the following experimental formula:

Polyvinyl alcohol	6 parts
Glyceryl monostearate	4 "
Synthetic detergent	12 "
Tetrasodium pyrophosphate	1 part
Butyl cellosolve	6 parts
Mineral oil, light	21 "
Water	50 "

In this preparation, a sulfated fatty alcohol paste, a petroleum sulfonate, or a sodium alkyl aryl sulfonate may be used as the synthetic detergent-emulsifiers. The proportion of mineral oil can be reduced if desired or replaced by white spirits, deodorized kerosene or the like.

Somewhat similar preparations containing polyvinyl alcohol have been described in patent specifications.[16] In one recent instance[17] it was suggested that a skin cleaner could be composed of a dispersion of polyvinyl acetate in an aqueous solution of polyvinyl alcohol or of a dispersion in water of partially hydrolized polyvinyl acetate; the dispersion being dissolved or swelled in an organic solvent. It is claimed that the resulting product will not gel or leave any deposit on the skin.

The patent literature provides several other examples of the use of novel materials or methods for the production of waterless hand cleaners. For instance, in the following preparation,[18] which contains detergents, plus glycerine to act as an emollient and adjunct solvent, egg albumen forms the body of the material for absorbing oils, dirt and soiling materials on the skin:

Egg albumen	**39.0**	**per cent**
Water, distilled	**39.0**	**" "**
Potash coconut oil soap solution (Sp. gr. 1.028)	**7.8**	**" "**
Glycerine	**1.5**	**" "**
Sodium stearate solution (20 per cent)	**1.0**	**" "**
Sodium hexametaphosphate solution (10 per cent)	**11.7**	**" "**

Up to 0.1 per cent of an antioxidant is included in the preparation; hydroquinone, maleic acid or gum guaiac being suitable for this purpose. Perfume and color may be added if desired. The resulting liquid cleaner is applied to the hands and, after being rubbed dry, crumbles and is easily brushed off, leaving the hands clean and provided with protection from chapping.

The use of wiping towels or cloths is also obviated with the rubberlike cleaning composition developed by Blumberg.[19] He found that fatty oils can be converted into soft solid, suitable as hand cleaner bases, by treatment with sulfur chloride. Thus, a suitable base can be made by reacting 100 parts of soya bean oil with 6 to 12 parts of hydrated lime, and cooling to 50° F. To this add about 15 parts of sulfur monochloride diluted with one-third its volume of inert, high-boiling petroleum solvent (e.g. Stoddard solvent). Cool to 50° F. and again add 16.5 parts of sulfur monochloride diluted with one-half its volume of the solvent. Stir vigorously until the mass solidifies. This base is then mixed with other materials, as in the following example:

Base	**100**	**parts**
Diethylene glycol mono-ether	**30**	**"**
Diglycol laurate	**20**	**"**
Sorbitan monolaurate	**10**	**"**
Water	**50-60**	**"**

Methyl cellulose may be added to the water and fillers, abrasives and perfume may also be included in the preparation. After milling, the mixture yields a uniform cream or paste which after rubbing on the hands, will "roll" off the skin, carrying dirt, grease and foreign material with it.

In addition to the general duty waterless hand cleaners, there are a number of more specialized products designed to remove rather specific kinds of soils and stains. Hollabough and his associates,[20] for example, mention the use of preparations based on carboxymethyl cellulose for removing stains from copying inks or pencils or from typewriter ribbons. A check of the patent[21] mentioned in their review shows that such cleaners are prepared as pasty products containing CMC or other cellulose ether swollen by water and one or more organic solvents. If required, other ingredients, like soap and glycerine, may be added.

A similar-purpose product that is especially suitable for use by office workers and the like was described by McClelland and Bateman[22] in their report on the polyethylene glycols and Carbowax compounds. Ac-

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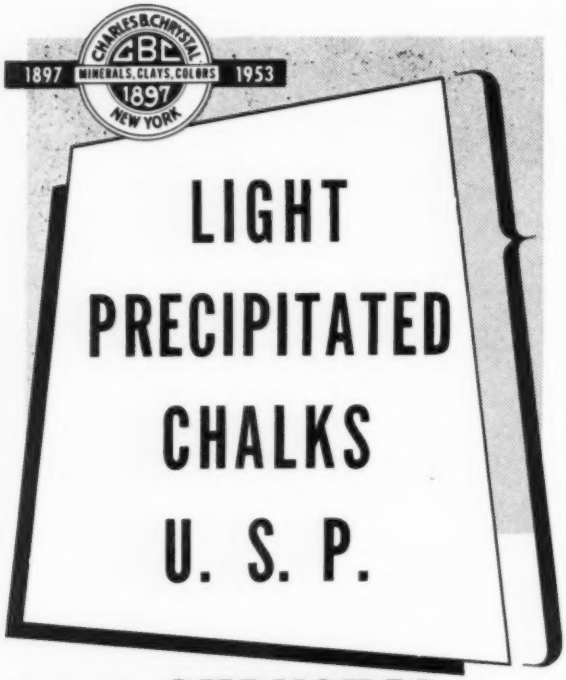

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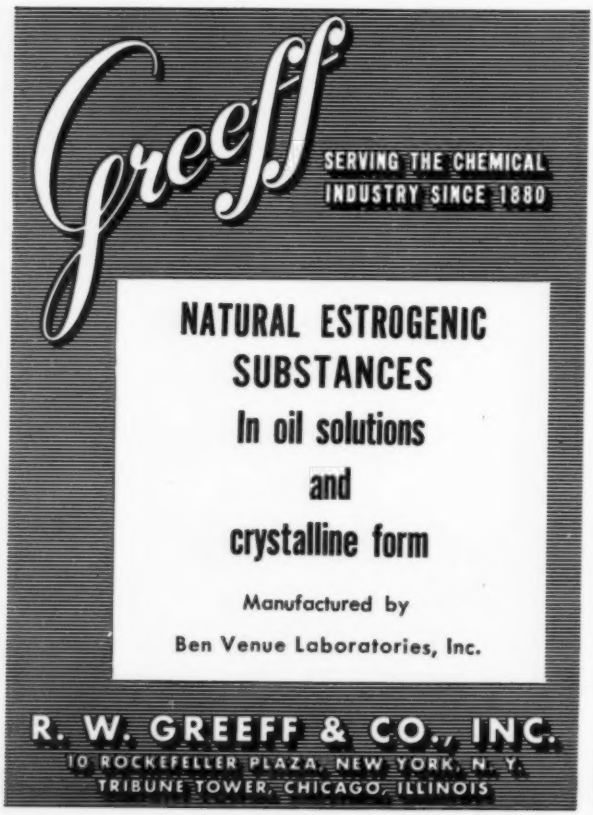

cording to them, a cream for removing carbon paper and ink stains can be prepared from:

Carbowax compound 4000	**50.0 parts**
Water	**50.0 "**
Propylene glycol	**50.0 "**
Triethanalamine	**8.0 "**
Oleic acid	**14.0 "**
Lanolin, anhydrous	**7.0 "**
Mild abrasive	**82.0 "**
Terpineol	**0.5 part**
Sodium bisulfite	**0.3 "**

Where a liquid preparation is preferred, as is often the case with stenographers, typists and other office workers, the need could be met with a preparation like that developed by Supple[23] some years ago. According to his patent, a rapid-acting, easy-to-use, non-injurious solution for removing ink, carbon paper, dye and similar stains from the hands may be made from:

Titanium Trichloride (20 per cent aqueous solution)	**1 part**
Glycerine	**1 "**
Alcohol (pure or S.D. 23A)	**3 parts**

The proportions may be varied and a perfume can be added. Although the cleaner does not deteriorate, it should be packaged in a tightly sealed container.

Also illustrating a rather specialized type of cleaner is the product prepared by Clensos.[24] Although primarily intended for the removal of theatrical make-up adhesives, his preparation is also effective against gums, paints, tar, lipstick, oils, greases and other soil on the skin or hair. Claimed to act effectively without causing skin irritation, such a cleaner consists of a mixture of light liquid petrolatum, a deodorized hydrocarbon fraction within the kerosene range, enough lanolin to produce a pasty consistency, and aluminum stearate to act as a jelling agent.

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The Delaney Cosmetic Bill

(*Continued from page 319*)

do with the definition of the term, "cosmetic chemical." I have read this definition many times and with the

greatest possible care, and in spite of more than thirty years of experience and study on restrictive measures and administrative law, I cannot understand it. In fact, I do not consider that it is written in English. Since this is a criminal statute the necessity for precise and understandable language is greater than it might be in a purely civil statute, and this definition is neither clear, understandable nor precise.

Next, I would comment on the proposed revision of Section 601 covering adulterated cosmetics. This provision hands the Administrator complete authority if he chooses, by regulation, to bar the use of any material whatever in the dyeing of the hair if any coal-tar coloring matter is used. I had a considerable part in drafting the present language of section 601. It was worked out with extreme care to protect, not the interests of the manufacturers of paraphenylenediamine hair dyes, but the economic interests of the consumer of these dyes who in many cases must have them to maintain position and even livelihood. The present provision has been completely adequate; no serious damage to the public or to anyone else has occurred under it, and I think it is going much too far to hand to anyone the authority to ban absolutely products which may safely be used in the public interest.

Then we come to the question of "cosmetic chemicals" or the so-called "new drug application." This section again passes to the Administrator the complete power of life and death over every manufacturer of cosmetics who desires to use a new raw material in his products, and even permits the Administrator to completely change the rules in the middle of the game. It requires the manufacturer to submit more data to the Administrator than the Administrator needs for determining safety. It then throws open to hearings, and there is no provision for secret hearings or discussions, all the prescribed manner in which the new chemical is supposed to be used, thereby handing to every competitor, not only knowledge of what the new chemical is, but complete knowledge as to how it may be used in formulating a competitive product.

I submit that this is entirely too much authority for anyone to have and I further submit that without the provision of safeguarding the secrecy of the manufacturers' data, the proposal is completely destructive of competitive conditions in the industry. If such power should be granted by any mischance, I would favor a further amendment of the Act to strike out the word "Administrator" and insert in its place "People's Commissar for Cosmetics."

Finally, the only provision for court review of the findings of the Administrator on the use of a new chemical are those presently existing in the law covering the validity of regulations. There is no provision for court review of findings of facts "if supported by substantial evidence." The Administrator accordingly may find on the basis of the record any facts that he cares to and all that the applicant may do is to adduce new evidence not previously brought forth in the hearings. This is not in any sense a judicial review of a contro-

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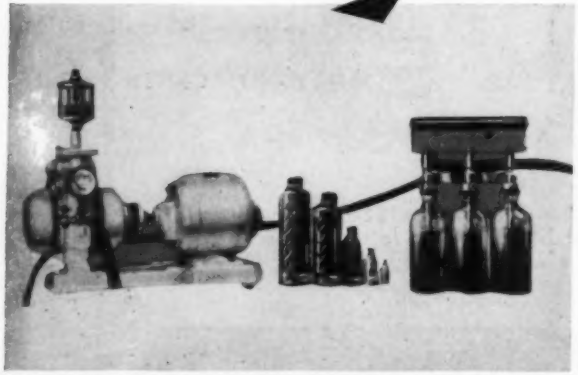

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versy arising under the proposed "cosmetic chemical" provision of the bill.

Whoever drafted this measure must have been intent on placing dictatorial powers in the hands of the Administrator. I would commend to him a thorough study of the development of Administrative law in this country and in foreign countries and would recommend that he carefully consider whether the application of foreign ideas of administrative law is in line with American tradition. In those cases where the foreign idea has been transplanted bodily into American jurisprudence, the statutes have not worked well and have in almost every instance caused serious damage to individuals or corporations seeking their normal rights under the American economic system. I might here allude to the recent decision of the Federal Communications Commission on the manufacture and distribution of color television. I am confident that the system now existing under the Food, Drug and Cosmetic Act, whereby the Administrator must bring his evidence into open court and where the decision of the first court is subject to review by other and higher courts is a proper one for any situations which may arise under the Food, Drug and Cosmetic Act.

We in the drug and allied industries have had high respect for former Commissioner Campbell, former Commissioner Dunbar, and we hold the same high respect for present Commissioner Crawford, but neither these gentlemen, nor we, can guarantee what the attitude and what the character of the successors to these gentlemen may be. If this Delaney proposal becomes law, some future Commissioner with deep antipathy toward the cosmetic industry, and there are such people, could utterly destroy all scientific progress in cosmetics. It is too much power to be given to any administrative body and too much power for any administrative body to request.

Let us hope that any future proposals for amendments be more carefully thought out and more in line with the American tradition.

Pharmaceutical Aspects of Vitamin B_{12}

(Continued on page 321)

We have found West No. 124 (pink)* stock stoppers to be satisfactory for this purpose, especially when prepared as follows. Wash with a hot 0.1-1.0 per cent solution of Mirapon D.F. Concentrate.** Rinse the stoppers with repeated amounts of distilled water until free from detergent. Imerse the stoppers in distilled water and autoclave at 15 lb. pressure for 20 minutes. Pour off the water and rinse with distilled water. Add sufficient distilled water to cover and again autoclave as before. Rinse with distilled water, dry, and sterilize.

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*West Company, Phoenixville, Pa.
**Miranol Chemical Co., 16 Melville Place, Irvington, N. J.

min B_{12} per ml., which were prepared in this manner, have been stored for one year at room temperature with no loss in vitamin B_{12} content.

Benzyl alcohol has proven to be more satisfactory than redistilled phenol as a bacteriostatic agent on the basis of prolonged accelerated vitamin B_{12} stability tests. However, it must be emphasized that, if phenol is to be used, redistillation over alkali is essential in order to remove trace contaminants which cause vitamin B_{12} decomposition.

C. *Solutions containing other components*

Parenteral solutions in which vitamin B_{12} is dissolved in Liver Injection U.S.P. are being offered commercially. Parenteral liver solutions are available*** which have been pretested to confirm their compatibility with vitamin B_{12}. The preparation of parenteral solutions of vitamin B_{12} and liver is a simple solution of the crystals in the liver solution, followed by bacteriological filtration. The solution should be stored for three to seven days in a refrigerator, refiltered through a sterile 03 Selas candle and subdivided as described in paragraph II-B.

Parenteral solutions containing vitamin B_{12} and folic acid, with or without liver, present a problem where the optimum stability of vitamin B_{12} at pH 4.5-5.0 must be compromised with the greater solubility of folic acid (or its sodium salt) at a higher pH. In connection with solutions containing vitamin B_{12} and folic acid, Taub and Lieberman[3] have reported that it is possible to dissolve and maintain in solution, with the aid of niacinamide as a solubilizer, five milligrams of folic acid per cc. at a pH of six under conditions compatible with crystalline vitamin B_{12} at a concentration of 30 micrograms per cc. "Results after storage at room temperature and under accelerated conditions show no significant loss of potency of either the folic acid or the vitamin B_{12}, and indicate satisfactory stability with respect to clarity of solution."

Solutions containing vitamin B_{12}, folic acid and liver can be prepared by dissolving the vitamin B_{12} crystals (calculated on the anhydrous basis) in the pretested liver injection and adding to this solution, with constant stirring, the folic acid previously dissolved in a minimum of 0.1 N sodium hydroxide solution. The pH of the resulting solution should be adjusted to 6.5 before the final adjustment of volume, at which pH at least 5.0 milligrams of folic acid per cc. will remain in solution. The solution should be filtered bacteriologically, stored for three to seven days in a refrigerator, refiltered through a sterile 03 Selas candle and subdivided as described in paragraph II-B. The stability of vitamin B_{12} in this type of product must be carefully checked.

The vitamin B complex (in entirety, individually, or in combination of components) is sometimes formulated with vitamin B_{12} as a parenteral solution. No stability or other problems are anticipated within the pH range of 3.0 to 5.0.

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III. Oral Liquids

The fundamental problem in formulating oral liquid products containing vitamin B_{12} is one of stability. As mentioned in Section I, such popular components as ascorbic acid, sugars, ferrous salts, or some flavors will contribute to vitamin B_{12} instability. However, judiciously controlled stability studies may indicate that a given overage of vitamin B_{12} added at the time of preparation will insure the retention of the label-claimed quantity during the anticipated shelf-life. The use of the accelerated compatibility test described in paragraph I-E is especially useful in liquid product development problems.

In connection with the incompatibility of vitamin B_{12} and ascorbic acid in an aqueous system[4], Bartilucci and Foss[5] recently reported excellent stability of both of these vitamins when using equal parts of glycerine and propylene glycol as the solvent. In their solvent system, there was no loss of vitamin B_{12} after six months' storage at room temperature and only 20 per cent loss after six months' storage at 40° C. They also postulated that it may not be ascorbic acid itself, but a decomposition product of ascorbic acid which is responsible for the instability of vitamin B_{12}. The pH of the ascorbic acid-vitamin B_{12} solution is known to have an effect on the rate of vitamin B_{12} decomposition, with a decrease in rate in the pH 6.0-7.0 range as compared to lower pH ranges.

In a given problem concerning the development of a liquid product, one must first establish that vitamin B_{12} is completely or adequately stable in the presence of the other therapeutic components. The composition of the solvent can include, for example, water, alcohol, glycerine, propylene glycol, or sorbitol, none of which have an adverse effect on the stability of vitamin B_{12}. Substances such as methyl cellulose and gelatin are, at times, used as thickening agents.

The pH can be adjusted from 3.0 to 6.5, depending on the stability or solubility properties of the other components of the formulation, without any adverse effect on the stability of vitamin B_{12}, from a practical point of view.

The flavoring agents must be carefully chosen, since many vitamin B_{12} stability problems have been solved by a change of flavors. Reducing substances like vanillin must be avoided. Oil of lemon, oil of orange, oil of cognac green, coumarin, methyl salicylate, and saccharin have been found to be satisfactory. Pretesting the compatibility of proposed flavors is strongly recommended.

Fortunately, the commonly used preservatives (such as methyl p-hydroxybenzoate, propyl p-hydroxybenzoate, benzoic acid, or salicylic acid) and pharmaceutical coloring agents do not present any particular vitamin B_{12} stability problems.

There has been considerable interest recently in the so-called "two package" formulations, particularly in multivitamin products where the vitamin B_{12} and ascorbic acid are separated into each of the two com-

ponents. The consumer mixes the two packages immediately prior to starting its use.

One container always contains an aqueous liquid which is usually a solubilization or emulsion of vitamin A and D, and possibly some of the other water-soluble components such as ascorbic acid, together with the flavors and other additives. The other can be either a lyophilate, a dry powder mixture, or a solution of the balance of the water-soluble vitamins. In the latter case of a solution, it becomes obvious that the two mutually offending substances must be separated by placing one in each of the solutions.

Talc must not be used in the filtration of vitamin B_{12}-containing liquids because of its ability to quantitatively adsorb and thus remove vitamin B_{12}. For the same reason, all filter aids must be carefully tested to ascertain that they do not adsorb vitamin B_{12}. Fritted glass and porcelain filters have been found to be satisfactory.

IV. Compressed Tablets

Vitamin B_{12} can be formulated in compressed tablets, even in the presence of "incompatible" substances, so that adequate stability can be maintained. There are two general methods of incorporating vitamin B_{12} (in the granulation and in the coating) which will be considered separately.

A. *Vitamin B_{12} in the tablet granulation*

1. Tablets containing only vitamin B_{12}

Tablets containing vitamin B_{12} alone are prepared quite simply by, for example, adding the required amount of vitamin B_{12} trituration (for optimum distribution of the vitamin) to a mixture of seven parts of mannitol and one part of calcium phosphate dibasic. After thorough blending, the powder is granulated by moistening with starch paste or gelatin solution, oscillating or pressing the mass through a No. 8 screen, and drying the resulting granules at 40° C. The dried granules, forced again through a No. 14 screen, are lubricated with a mixture of magnesium stearate and corn starch (1 and 10 per cent, respectively, of the weight of the granulation) and compressed. A 10 per cent overage of vitamin B_{12} has been found to be satisfactory in this formulation. Tablets prepared by this method have retained complete vitamin B_{12} content after storage for one year at room temperature.

It should be emphasized that talc should not be used in the lubricants of tablets containing vitamin B_{12} because of the tenacious adsorption capacity of talc for the vitamin, which frequently interfere with assays.

2. Tablets containing vitamin B_{12} and other compatible ingredients

Tablets containing vitamin B_{12}, together with therapeutic substances with which it is compatible (see paragraph I-B, can be prepared by the usual methods, provided granulating solutions containing reducing substances (such as sugar solutions) or oxidizing substances (such as acacia solutions which may contain oxidases and peroxidases) are avoided.

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In vitamin B complex tablets, the vitamin B_{12} trituration should be thoroughly mixed with the niacinamide, riboflavin, pyridoxine hydrochloride, calcium pantothenate, and any other components which are routinely wet-granulated. The thiamine hydrochloride is added to the dry granules at the time of lubrication and the tablets are then compressed. A vitamin B_{12} excess of 10 per cent has been found to be satisfactory in this type of formulation for normal shelf-life.

The vitamin B_{12} trituration can also be incorporated with the lubricant which is, in this case, thoroughly mixed with the granulation prior to compression.

If one desires to use vitamin B_{12} crystals, to insure good distribution they can be either dissolved in a portion of the granulating liquid or in a small quantity of methyl or ethyl alcohol which is added, with trituration, to some of the powdered constituents of the tablet before granulating.

The preparation of tablets containing vitamin B_{12} together with therapeutic substances with which it is compatible presents no formulating difficulties other than the necessity of avoiding talc.

3. Tablets containing vitamin B_{12} and other "incompatible" ingredients

Vitamin B_{12} can be satisfactorily included in compressed tablets containing substances which could contribute to its instability by, in effect, separating the vitamin B_{12} from the offending substances through a "coating" technique.

For example, a tablet containing the vitamin B complex (including vitamin B_{12}) and ascorbic acid could be made as described previously in paragraph IV-A-2 where the vitamin B_{12} is wet-granulated with the niacinamide, riboflavin, pyridoxine hydrochloride, calcium pantothenate, and other components or excipients. After thoroughly drying this granule and reoscillating it, it is "coated" with one gram of magnesium stearate for every 99 grams of granules. The ascorbic acid is also "coated" with one gram of magnesium stearate for every 9 grams. The thiamine hydrochloride, the "coated" ascorbic acid, and the lubricant is then added to the "coated" granules, and mixing is continued only long enough to assure thorough blending. Compression is then carried out in the normal manner, with due precautions against the possibility of absorption of moisture. Avoid compressing in humid weather if the tableting department is not air-conditioned.

Such substances as ferrous sulfate, ferrous gluconate, liver concentrates, and yeast extract should be handled in a manner similar to ascorbic acid in the preceding example.

Although vitamin B_{12} formulated in this manner is quite stable (in many cases, no loss after one year storage at room temperature) it is obvious that the stability of vitamin B_{12} will vary with the formulation and such factors as the methods of handling and the amount of moisture in the finished tablet. Stability tests are consequently always required to determine the necessary overage to assure the label-claimed quantity of vitamin B_{12} throughout the anticipated shelf-life.

B. *Vitamin B_{12} in the tablet coating*

Another approach to the formulating of vitamin B_{12} in tablets which contain ingredients with which it is not compatible is to separate vitamin B_{12} from such offenders by including it in the coating. The tablets (without the vitamin B_{12}) should be compressed in the usual manner and sub-coated. The tablets are given one or two coats of pharmaceutical glaze and then coated with a warm solution of approximately 10 per cent gelatin in which the vitamin B_{12} is dissolved.

It is obvious that careful distribution is essential in the coating process, and an excess of coating liquid (which would collect on the sides of the pan) must be avoided. In addition, the volume of the gelatin solution should be determined so that it can be applied to the tablets in 4 to 6 "shots".

After thorough drying, the gelatin coats are sealed with one or two additional coats of pharmaceutical glaze, and the tablets are finished in the normal manner. For the same reason of vitamin B_{12} adsorption mentioned previously, talc must not be used in the dusting powder during the coating processes.

Vitamin B_{12} incorporated into tablets in this manner is very stable, and excesses are mainly necessary to overcome that amount lost by adjesion to the coating pan and by dusting.

V. Molded Tablets

Molded tablets containing vitamin B_{12} alone or combined with other substances are particularly desirable where complete and rapid solubility are needed and where the normal increase in fragility can be coped with.

The base or diluent of these tablets can consist of such water soluble substances as mannitol or lactose, together with sufficient sucrose to produce a firm tablet when the final mixture is moistened with liquids (such as alcohol or acetone, with or without about 10 per cent distilled water) prior to molding.

The vitamin B_{12} is evenly distributed throughout the tablet either by dissolving the crystals in a minimum of alcohol and adding this solution slowly and with trituration to the powder base, or by using the trituration of vitamin B_{12} in mannitol in the formulation. The molding process for preparing tablets is adequately described elsewhere[6].

Vitamin B_{12} can be expected to be completely stable in molded tablets in the absence of "offending" substances such as reducing agents.

VI. Hard Shell Capsules

The principles that are involved in successfully formulating vitamin B_{12} into powders which are to be filled into hard-shell gelatin capsules are the same as those described under compressed tablets. In the cases of capsules which are to contain vitamin B_{12} alone or combined with substances with which it is compatible, the problem is simply one of dilution with sufficient extenders such as mannitol, dicalcium phosphate, or corn starch and adding 1 or 2 per cent magnesium

stearate as an aid to flow-properties in the filling operation.

In the cases of capsules which contain "incompatible" substances, the same separating or "coating" technique is used as mentioned previously. The vitamin B_{12} is mixed with approximately one-half of the powder mixture which contains from 1 to 2 per cent by weight magnesium stearate. The rest of the mixture which contains the incompatible substance or substances is likewise mixed with 1 or 2 per cent of its weight of magnesium stearate. These two portions are then blended together immediately prior to encapsulation. For optimum stability, the powder ingredients should be thoroughly dried before being incorporated into this type of formulation. The vitamin B_{12} stability can only be determined by experimentation, but there is usually less than 25 per cent loss of vitamin B_{12} after storage for one year at room temperature in glass or other moisture-impervious containers.

VII. Soft Shell Capsules

Since relatively few laboratories have facilities for the manufacture of soft gelatin capsules and since these formulations present such unique problems, this subject will be omitted from this presentation.

VIII. Powders

The formulation of powders containing vitamin B_{12} involves the same principles which have been discussed under Compressed Tablets, Section IV and, particularly, under Hard Sheel Capsules, Section VI. Powder mixtures containing vitamin B_{12} and "compatible" substances such as those listed in paragraph I-B can be made by simple mixing and complete vitamin B_{12} stability can be anticipated. Powder mixtures containing vitamin B_{12} and "incompatible" substances can be satisfactorily formulated by the "coating technique" as described in Section VI, and the same stability situation described therein would also apply.

Stability is certainly the most important problem concerning the pharmacy of vitamin B_{12} since the minute quantities usually included in formulations have no effect on such properties such as the compressibility of tablets or taste of liquids. Vitamin B_{12} no longer presents many of the stability problems which were anticipated a few years ago before the development of a commercial process for manufacturing the pure crystalline product. The fact still remains, however, that a stability test of a pilot run of a given product is the only method for definitely ascertaining the stability of vitamin B_{12} and the stability of the other components in that product.

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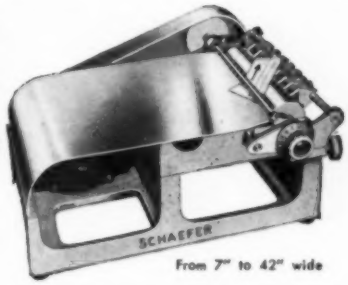

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American Cholesterol Products, Inc. 372, 390
Anderson Bros. Mfg. Co. 418
Aromatic Products, Inc. Insert facing 312
Atlas Powder Company Insert facing 376
Avery Adhesive Label Corp. 417

Baker & Bro., H. J. 290
Baker Chemical Co., J. T. 354
Beauty Fashion Magazine 312
Bertrand Freres, Inc. 285
Braun Co., W. 416
Bush & Co., W. J. 394
Burgess Agency, Will. 423

Calco Chemical Division 288
Calumet Manufacturing Co., Inc. 358
Camilli, Albert & Laloue, Inc. 424
Carr-Lowrey Glass Co. 348
Cavalla, Inc. A. 421
Chiris Co., Inc., Antoine 293
Chrystal Co., Inc., Charles B. 414
Colton Company, Arthur Insert facing 361, 419
Continental Can Company 344
Crown Can Company 356
Crown Cork Specialty Corp. 405

Distillation Products, Inc. 308
Dodge & Olcott, Inc. 374
Drew & Co., Inc., E. F. 299
Dreyer, P. R., Inc. Insert facing 292
Drug & Cosmetic Review 304
Dunkel & Co., Inc., Paul A. 372
du Pont de Nemours & Co., Inc., E. I. Kinetic Chemicals Division 346-347
Durlin Co. Insert facing 289
Devold Oil Co., Peder 403

Eastman Chemical Products, Inc. 407
Emery Industries, Inc. 307
Ertel Engineering 401
Exact Weight Scale Co. 402

Fairmount Chemical Co. 423
Felton Chemical Co., Inc. 378
Firmenich & Co., Inc. Insert bet. 304-305
Florasynth Labs., Inc. 297
Fritzsche Brothers, Inc. Insert bet. 384-385

Gair Co., Inc., Robert Insert facing 337
Givaudan-Delawanna, Inc. Insert bet. 288-289
Gottscho, Inc., Adolph 419
Greeff & Co., R. W. 414

Halby Products Co. 417
Haring Equipment Corp. 397
Hazel-Atlas Glass Company Insert facing 360
Heyden Chemical Corp. 382, insert facing 377
Hinde & Dausch Paper Co. 287
Hoffmann-La Roche, Inc. 281, 388
Hooker Electrochemical Co. 292
Hormann & Co., F. R. 416
Horn, John 421
Huisking & Co., Inc., Chas. L. 403

Inland Alkaloid Co. 396
Innis-Speiden Company 400
Ising Corp., C. E. 423

Jelly & Co., Walter H. 397

Kelton Cosmetics Co. 409
Kessler Chemical Co. 394
Kimberly-Clark Corp. 341
Kimble Glass Insert facing 353
Kohnstamm & Co., H. Insert facing 296
Kolmar Laboratories Insert facing 297
Koster-Keunen Mfg. Co., Inc. 390

Lautier Fils 289
Lueders & Co., George 286
Lusteroid Container Co., Inc. 398

Magnus, Mabee & Reynard, Inc. 306
Mallinckrodt Chemical Works Insert facing 313
Maryland Glass Corp. Insert facing 288
Merck & Co., Inc. 301
Monsanto Chemical Company 294
Morningstar, Nicol, Inc. 284

National Instrument Company 411
Neumann, Buslee & Wolfe, Inc. 411
New Jersey Machine Co. 366
New Jersey Zinc Co. 399
New York Quinine & Chemical Works, Inc. 302
Niagara Blower Company 406
Norda Essential Oil & Chemical Cover 2

Oil Equipment Laboratories, Inc. 362
Old Empire Mfg. Chemists, Inc. 408
Orbis Products Corporation 291
Owens-Illinois Glass Company Insert facing 336 & 338

Package Machinery Company 334
Pantone Press 412
Parsons-Plymouth, Inc., M. W. 380
Penick & Co., S. B. 298
Pennsylvania Glass Products Co., Inc. 340
Pennsylvania Refining Co. 296
Pfaltz & Bauer Co., Inc. 423
Pfizer & Co., Inc., Chas. Cover 4
Popper & Sons, Inc. 410
Progressive Labelling Machine Inc. 423

Richford Corporation 349
Risdon Mfg. Co., The 371
Ritter & Company, F. 410
Roure-Dupont, Inc. 300

Santonine Company of America 403
Scandia Manufacturing Co. 423
Schaefer Mfg. Co. 423
Schoettle, Edwin J. Co. 342
Sheffield Tube Corp., The Insert facing 352
Sindar Corporation 413
Solvay Process Division, Allied Chemical & Dye Corp. 303
Southwestern Engineering Co. 404
Standard Pharmacal Co. 418
Sterwin Chemicals, Inc. 283
Stokes Machine Co., F. J. 364
Strong Cobb & Co., Inc. 310
Sunkist Growers Insert facing 293
Synfleur Scientific Labs. 295

Tamms Industries, Inc. 423
Thurston & Braidlich 396
Toilet Goods Association, Inc., The 350

Ungerer & Co., Inc. Cover 3
U. S. Automatic Box Machinery Co. 368
U. S. Bottlers Machine Co. 380

van Ameringen-Haebler, Inc. Insert bet. 312-313
Vitamerican Oil Corp. 412
Verona Chemical Co. 311

Welch, Holme & Clarke, Inc. 415
Will & Baumer Candle Co. 305
Wolf & Co., Jacques 408
Wyandotte Chemicals Corp. 309

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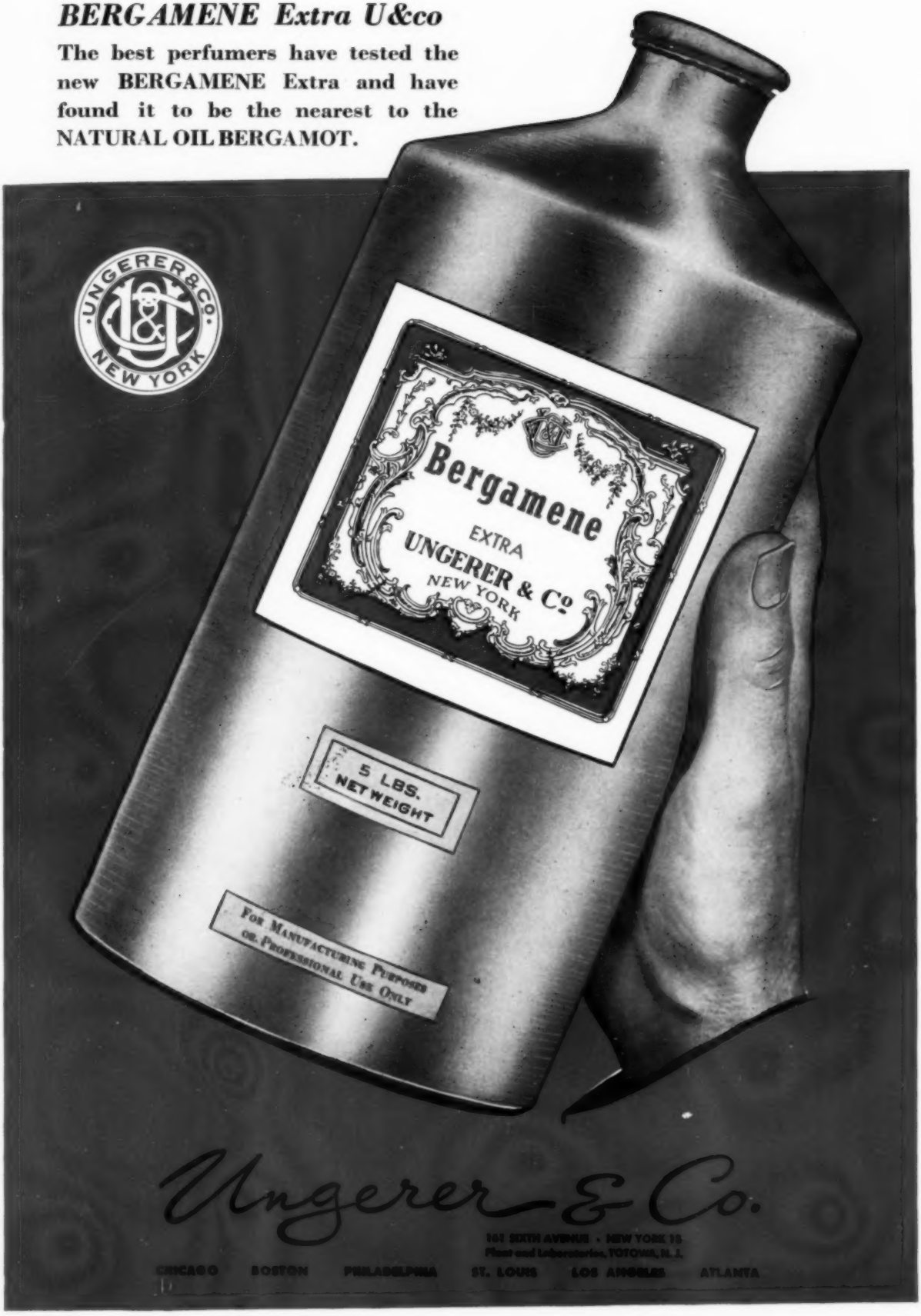

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